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Railroad Freight Car Safety Standards; Safety Glazing Standards—Locomotives, Passenger Cars and Cabooses

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

49 CFR Part 215

[Docket No. RSFC-6, Notice 2]

Railroad Freight Car Safety Standards

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: This document revises Part 215 (49 CFR Part 215). The revised part contains FRA's rules applicable to railroad freight cars. The revised rules update, consolidate, and clarify the old rules and eliminate certain rules no longer considered necessary for safety. This action is taken by FRA to improve its safety regulatory program.

EFFECTIVE DATE: These rules, with the exception of § 215.15 (Periodic Inspection), will become effective on March 1, 1980. Section 215.15 is effective December 31, 1979 because it extends the deadline for accomplishing initial periodic inspections from December 31, 1979 to June 30, 1980.

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SUPPLEMENTAL INFORMATION:

Background

Regulatory Reform

On March 23, 1978, the President issued Executive Order 12044. In that Order, he directed all Executive Agencies to adopt procedures to improve existing and future regulations. As a matter of policy, the Order requires that regulations be as simple and clear as possible, achieve legislative goals effectively and efficiently, and not impose unnecessary burdens. To achieve this policy objective, the Order requires Agencies to address the following considerations, among others, when developing regulations: (1) The need for and purposes of the regulation must be clearly established; (2) An opportunity must be provided for early participation and comment by other Federal Agencies, State and local governments, businesses, organizations, and individual members of the public; (3) Meaningful alternatives must be considered and analyzed before the regulation is issued; and (4) Compliance costs, paperwork, and other burdens on the public must be minimized.

In response to the policies set forth in Executive Order 12044, FRA initiated a General Safety Inquiry for the purpose of evaluating and improving its safety regulatory program.

This inquiry was announced in the May 8, 1978, issue of the Federal Register (43 FR 19696). That notice also announced that FRA would conduct a series of two-day public hearings. The notice stated that the purpose of the hearings would be to obtain information from the public that would help FRA to determine whether any of its existing regulations should be expanded in scope, revised, or revoked.

FRA has conducted all of the hearings announced in the notice. These hearings dealt with the following subjects: (1) locomotives (June 14 and 15, 1978); (2) freight cars and safety appliances (July 12 and 13, 1978); (3) power brakes (September 13 and 14, 1978); (4) track and related structures, appliances, and devices (November 15 and 16, 1978); and (5) signal and communications systems (February 21 and 22, 1979).

After reviewing the testimony presented at those hearings, and the written comments submitted in response to the hearing notice, FRA has begun the process of issuing proposed rules for the purpose of improving many of its existing rules and eliminating others no longer considered necessary for safety. To date, three notices of proposed rulemaking (NPRM) have been issued. These are as follows: (1) Freight Car Safety Standards (44 FR 1419; January 5, 1979); (2) Locomotive Inspection (44 FR 29604; May 21, 1979); and (3) Track Safety Standards (44 FR 52104; September 6, 1979).

As announced in the notice of proposed Freight Car Safety Standards, FRA conducted a public hearing on March 7, 1979, to provide an opportunity for interested persons and organizations to testify concerning those standards. At that hearing, testimony was presented by ten railroads, the Association of American Railroads (AAR), The Railway Labor Executives Association (RLEA), one private car owner, one car repair company, and two manufacturers of freight car components. In addition, written comments were submitted by railroads, private car owners, car repair companies, railroad unions, manufacturers of freight car components, a Federal agency, State and local agencies, members of Congress, and private persons. All of the testimony and comments have been reviewed and fully considered during the formulation of the final rules set forth in this document.

Most commenters expressed general support for the proposed rules. However, many recommended that revisions be made to one or more of the changes proposed by FRA. The following is a summary of many of the comments received and an explanation of the revisions made by FRA in response to those comments. The comments and related revisions have been organized under major subject headings.

The sequence of the subject headings in this preamble generally corresponds to the order in which they appear in the text of the final rule. However, periodic and pre-departure inspections and related issues are discussed first because they present major overriding issues that affect most of the provisions of the final rule.

I. Periodic and Pre-Departure Inspections and Related Issues

Periodic Inspection

Subpart C of the NPRM sets forth the proposed requirements applicable to the periodic inspection of freight cars. The proposal would permit these inspections to be based on time or mileage intervals and would permit an extension of the proposed intervals upon a showing that the extension requested is justified. Under current regulations, periodic inspections are required every year for high utilization cars and every 4 years for all other cars, except that the first inspection for new or reconditioned cars is due within two years for high utilization cars and 8 years for all other cars. The subpart also specifies the items to be inspected, provides that cars would have to be detrucked during the inspection and that trucks would have to be disassembled as necessary to examine the components. Finally, the proposed subpart would require private car repair companies to become subject to the proposed standards in order to perform periodic inspections.

All the railroads felt that Federally imposed periodic inspection cycles and requirements were unnecessary and unjustified. Trailer Train contended that the need for periodic inspections was never justified by FRA. The AAR contended that both the current and proposed periodic inspection requirements are "good practice or maintenance standards" as opposed to safety standards. Many railroads stated that periodic inspections are costly and ineffective from the standpoint of safety.

Many commenters also had problems with various aspects of the periodic inspection requirements contained in the proposed rule. It was noted that disassembly of trucks "to the extent necessary" would subject private car owners that contract out repairs to inspection charges over which they would have no control. One railroad commenter felt that truck disassembly would cause more injuries than would normally be caused by freight car component failure because truck disassembly involves concentrated exposure to hazards related to working with heavy duty truck bolsters, side frames, lifting equipment, and cutting and burning operations.

Private car owners commented that they would need time to develop a system to accurately record mileage and suggested a five year interval for periodic inspections. A number of commenters recommended that these inspections be scheduled anytime within the calendar year they are due to avoid overburdening repair shops.

Several alternatives to the proposed periodic inspection were given. The Association of American Railroads (AAR) felt that the one-spot repair system (small all-purpose repair site) coupled with major rebuilding at the car's "half-life" would suffice for safety and would be economically beneficial.

Most railroads stated that the proposed time and mileage intervals are arbitrary and do not take into consideration advanced designs and materials. It was felt that these intervals do not reflect safe wear limits and would not result in any savings. They offered mileage figures that varied from 150,000 to 400,000 for new and reconditioned cars. It was also suggested by one railroad that the time interval for inspections of high utilization cars be increased to 24 and 48 months. Another railroad wanted a "grandfather clause" to exempt what is done as routine maintenance under interchange rules from being required to be repeated as part of a periodic inspection.

One commenter suggested using the average mileage for a series of cars. Several commenters noted that accurate mileage records would be impossible unless a tamper proof odometer is developed.

The Burlington Northern objected to proposed § 215.61 (extension of periodic inspection intervals) insofar as that section would not apply to cars more than 20 years old and to other than high utilization cars. Burlington Northern contends that age does not necessarily reflect the condition of a car. Further, it asserts that other than high utilization cars are maintained to the same high standards as high utilization cars and travel fewer miles each year.

Proposed § 215.71(a) provides that a car would be considered "reconditioned" if it is equipped with roller bearings, is less than twenty years old, and complies with the proposed requirements set forth in paragraph (b) of that section. Under paragraph (b)(1)(ii), a car would not be considered "reconditioned" unless its wheels have at least 50 percent of useful tread wear remaining. Under the proposed rules, reconditioned cars would be subject to the extended periodic inspection intervals applicable to new cars.

Railroads, car owners, and repair companies contend that the 20-year limit for reconditioned cars under proposed § 215.71 is arbitrary and not based on the mechanical condition of a well-maintained car. One commenter pointed out that FRA's 20-year limit on reconditioning of cars conflicts with the AAR 25-year limit on rebuilding. AAR stated that the proposed restriction is not related to safety and that all of proposed § 215.71(a) should be eliminated.

The requirement that wheels on reconditioned cars have not less than 50 percent of useful tread wear remaining was also considered to have no relation to safety by commenters. One commenter noted that the wheels would have to be taken off a reconditioned car and put on *another* car. If this were done, the wheels would again have to be changed at half the usual time, thereby doubling the labor costs for changing of wheels on both cars. It was stated by one commenter that it would cost $1,600 per car to replace the wheels. In this regard, another commenter pointed out that this could cause a worsening of the current wheel shortage. One car manufacturer felt that if the wheel was in compliance with proposed § 215.23 (defective wheels), that should be good enough for safe operation.

In addition, Burlington Northern contends that roller bearings should not be required for reconditioned status. According to Burlington Northern, plain bearings are inherently safe.

Proposed § 215.95(b)(4) provides that, if a car has been given a periodic inspection based on mileage records, the estimated date on which the next inspection will be required must be stenciled on the car.

Several railroads pointed out that it would be almost impossible to estimate the due date for the next periodic inspection for cars scheduled for inspection on the basis of mileage.

After reviewing all pertinent comments and testimony, FRA has reevaluated the proposed periodic inspection procedures set forth in the NPRM. Based on that reevaluation, it has decided not to adopt the proposed periodic inspection requirements and to revoke the periodic inspection requirements now in effect.

The requirement that all freight cars be subjected to periodic inspections was issued by FRA on November 12, 1973 (38 FR 32232) and became effective on January 1, 1974. The purpose of this requirement was to assist the FRA in defining and resolving the many safety problems resulting from changes in the design of freight cars and in the railroad operating environment during the period 1945–70.

The rapid transition in freight car designs during this period was causing numerous problems in the draft and suspension systems of freight cars. Because the draft and suspension systems regulate the functional integrity of a car, their components are critical from the standpoint of safety. The draft system is comprised of the center sill, draft gear, coupler, body bolster and center plate. The suspension system includes wheels, axles, bearings, and truck components.

Changes in freight car design along with major changes in the operating environment, increasing deficits and mergers of railroads, all combined to give rise to FRA's concerns. A review of the period 1945–70 relative to these changes will assist in illustrating the concerns that shaped FRA's decision to prescribe the periodic inspection requirement.

By the late 1940's, freight cars that could carry 40 or 50 tons of cargo had been developed and were in general use. These cars varied in length between 40 and 50 feet. By the end of that decade, some 70-ton load-carrying capacity cars, predominantly hoppers and covered hoppers, had been introduced. It was not until the 1950's, however, that larger 50- to 70-ton cars were constructed on a wide scale. The increased load-carrying capacity of these cars was largely accomplished by increasing the size of their journals with little or no increase in the length of cars. Beginning with the early 1960's, the capacity of cars being placed in service was further increased to between 70 and 100 tons. This was accomplished through both expanding journal sizes and increasing the length of cars to as much as 90 feet.

The changes in freight car design that permitted increased load-carrying capacity included numerous combinations of increases in the width, length and height of each type of car, such as hopper, tank, box and flat cars. The increased length of cars, increase in

truck spacing, increased height, and resulting higher centers-of-gravity, contributed significantly to the development of freight car instability problems. The most prominent instability problem, known as the "rock-and-roll" phenomenon, generated increased dynamic forces on certain draft and suspension components, such as center plates, truck and body bolsters, truck side frames, bearings, snubbers, and axles. Additionally, some of the draft and suspension components of the larger 100-ton cars had not been provided with a sufficient proportional increase in size and strength necessary to compensate for these higher dynamic forces. These problems generated excessive wear and frequent premature failure of components of these larger cars.

The operating environment for freight cars was also undergoing significant changes during the period between 1945 and 1970. There was a trend to longer and heavier trains. In 1945, according to published industry statistics, the average freight train contained 52 cars and carried slightly over 1,100 tons of freight. By the 1970's, the average freight train contained 70 cars and carried slightly over 1,800 tons of freight. The trend to longer trains and heavier tonnage created situations where increased in-train dynamic forces also produced greater component wear and fatigue than had previously been experienced, particularly in the suspension and draft systems. Merger of railroads that were separate entities in 1945 reduced the number of interchange locations where equipment inspections were conducted. In addition, the shift to consolidated maintenance facilities brought about a reduction in the inspection and maintenance efforts of the railroads. Finally, the poor economic condition of the industry prompted deferral of equipment maintenance.

Observing these changes in the railroad operating environment alongside the changes in freight car design, FRA became concerned that draft and suspension components had not been sufficiently adapted to respond to these changes. This concern was validated by the abnormal wear patterns and premature failures of these components. Thus, in the absence of any industry-wide practice that monitored component performance, the periodic inspection requirement, which focused attention on suspension and draft systems, was adopted in response to these concerns.

Although the adoption of the periodic inspection requirement was an immediate response to these safety concerns, it was not the only action taken by FRA in an effort to resolve these problems. To assist in the definition and resolution of emerging problems, FRA embarked on a variety of cooperative research programs with various segments of the railroad industry. These research efforts encompassed a wide range of areas and interrelated projects, including studies of track structure, freight car truck design, and train handling techniques. Additionally, to provide ongoing research, a highly controlled test environment, Facility for Accelerated Service Testing (FAST), was created at the Transportation Test Center in Pueblo, Colorado. "FAST" allows rapid in-service simulation testing of freight cars, thus subjecting freight car components to vigorous examination and monitoring. Also, FRA's response was complemented by the self-initiated actions of the railroad industry to define and remedy the safety problems associated with new freight cars.

The cumulative results of these responses are embodied in a number of changes in freight car design. For example, to improve stability, the distance between truck centers for longer freight cars has been increased and constant contact side bearings and more effective snubbing devices have been introduced. The increasing use of continuously welded rail has also served to reduce the "rock-and-roll" phenomenon. Improved train handling techniques, provided by development of the Train/Track Dynamics Manual and increased dynamic braking capability, have also assisted in the reduction of the magnitude of some in-train force levels being encountered with longer and heavier trains.

The periodic inspection program has nearly accomplished its major objectives, namely, to assist in the definition of the scope and the correction of safety hazards presented by changes in freight car design and the operating environment.

FRA estimates that approximately ninety percent of the freight car fleet has received a periodic inspection. Once all freight cars have been so inspected and repaired as necessary, FRA believes that the objectives of the program will have been met and that there will no longer be a demonstrated need for retaining the current periodic inspection requirements.

In addition to having served its function and having stimulated other actions in response to safety problems, other reasons support the elimination of the Federally mandated periodic inspection requirement. The railroad industry has established comprehensive freight car maintenance programs and now recognizes the economic and safety benefits that these programs provide. Despite continuing deficits, railroads have made manpower and capital investments to upgrade and expand their maintenance facilities to sustain these programs. Elimination of the periodic inspection requirements, then, will give the railroad industry the flexibility and incentive to develop more efficient preventive maintenance inspection programs that are tailored to their varied needs and service conditions. Moreover, since the periodic inspections have served to help define and resolve safety problems, such a broad Federal requirement is no longer needed. Rather, FRA can now monitor areas of concern on a case-by-case basis.

In the future, FRA will focus its attention and concentrate its resources to resolve specific safety problems. Although FRA will rely heavily on the voluntary cooperation of the railroad industry and its employees, it will not hesitate to take whatever regulatory action is necessary to assure safety. However, FRA will strive to tailor each requirement to fit the immediate safety problem so that the desired safety result is achieved at a minimum cost to the industry and the public.

Some examples of past actions taken by FRA to identify and resolve specific safety problems with freight car components that were causing numerous accidents include the resolution of premature center plate failures on 100-ton covered hoppers, correction of center sill fractures on flexi-van cars, and removal of high carbon cast steel wheels that had a high incidence of failure. The prime example was the retrofit of 112 and 114 jumbo tank cars to improve their safety performance in derailments. A soon to be issued FRA report to the Congress entitled "Issues and Dimensions of Freight Car Size" will analyze specific problem areas and possible responses to those problems.

It also should be noted that elimination of the periodic inspection requirements achieves important policy objectives of Executive Order 12044, namely, reduction of the regulatory burden on railroads, and recognition of the degree to which technology has improved the design and quality of freight car components. Therefore, the requirement (§ 215.15) to periodically inspect railroad freight cars is being revoked. However, cars that have not yet received an initial periodic inspection will have to be so inspected. These cars are generally two types, older less-active cars and cars that have

been continuously in assigned service. Since many of these cars have been in service for decades and have never received a comprehensive inspection for safety defects, FRA believes that it is essential from the standpoint of safety that they be given an initial periodic inspection if they are to remain in service.

To provide railroads with ample time to accomplish this task, FRA is extending the time allowed for completion of initial periodic inspections by six months, until June 30, 1980. FRA is taking this action in response to the petition submitted (November 8, 1979) by the AAR indicating that the continuing freight car shortage during the past year has delayed completion of the periodic inspection program. Although the AAR petition requests a one-year extension, FRA believes that a six-month extension will provide sufficient time to accomplish the remaining initial periodic inspections. The requirement to conduct other periodic inspections is being revoked by the final rule; thus railroads can concentrate their efforts on accomplishing initial periodic inspections on the estimated ten percent of the freight fleet that has not yet received a periodic inspection.

Pre-departure Inspection

The proposed standards do not contain pre-departure inspection requirements such as those set forth in current § 215.23.

Most commenters agreed that pre-departure inspections should be retained. They stated that this was the most important inspection. One private car owner felt that this inspection is an especially effective means of detecting major problems in the suspension and draft systems. Another commenter noted that more car components are broken and made unsafe during switching than hauling on line.

Several railroads pointed out that the deletion of the required pre-departure inspection would result in little, if any, savings because this inspection would be continued to ensure compliance with the Power Brake and Safety Appliance Standards. Also, elimination of the knowledge requirement for penalty violations would make pre-departure inspections a "must". Some commenters contended that pre-departure inspection would more likely ensure safe performance than the periodic inspections.

On reconsideration, FRA agrees with the majority of commenters that the requirement to conduct a pre-departure inspection should be retained. This inspection plays a major role in ensuring that cars are not dispatched with critical "running" defects, such as broken center plates or cracked wheels, which have the demonstrated potential to cause derailments that result in injuries and fatalities. Moreover, even if this requirement were eliminated, pre-departure inspections would still have to be conducted to ensure compliance with the Power Brake and Safety Appliance Standards. Therefore, retention of the current requirement would impose little, if any, added expense or inconvenience on railroads.

However, FRA is not retaining the current requirement that the inspection be conducted in accordance with instructions approved by the Federal Railroad Administrator. Rather, cars will have to be inspected for the critical safety defects listed in this final rule. Each car with one or more of these defects will have to be tagged for movement for repair or removed from the train if it cannot be safely dispatched. Since the objective of the pre-departure inspection is to uncover and ensure repair of critical running defects listed in this final rule, FRA does not believe that there is a demonstrated need to retain the current requirement for submission of safety inspection instructions for the approval of the FRA Administrator.

Moreover, since the railroads will be held strictly liable for prohibited defects on all freight cars in service, FRA does not believe that the timing of the pre-departure inspection is critical, so long as it is conducted before a car is dispatched. Thus, § 215.13 of the final rule provides that the inspection shall be performed at each location where a freight car is placed in a train. This inspection may be made before or after the car is placed in the train.

Inbound Inspection

The proposed Freight Car Safety Standards do not contain procedures for the inbound inspection of freight cars. The Brotherhood of Railway Carmen (Carmen) favors adoption of a rule requiring an inbound inspection. They contend that this would facilitate prompt repairs, avoid the possibility that defective cars may be placed in outbound trains, and thus would significantly reduce the chances that a car would have to be removed from an outbound train.

FRA recognizes that inbound inspection of cars is a highly efficient means of facilitating the repair of defective cars in many settings. However, FRA does not believe that an inflexible Federal requirement is appropriate. Rather, it believes that safety will be better served if attention is focused on the pre-departure inspection, which could be conducted on an inbound or outbound basis. Moreover, since the railroads will be held strictly liable for critical "running" defects and high penalties will be imposed for dispatching cars with these defects, there will be substantial motivation for railroads to find and repair defective cars before they are placed in outbound trains.

II. Other Issues

Maintenance-of-way Cars

Under proposed § 215.3(c), maintenance-of-way cars, except those used exclusively in work train service, would be subject to the proposed standards. Many commenters stated that this would impose a severe financial burden on railroads. The average price of a new car was cited at $30,000, with individual railroads claiming that anywhere from 200 to 3,000 of their maintenance-of-way cars would either have to be replaced or operated only in work trains.

Some commenters pointed out that these cars are structurally sound and are limited to slow speeds and local trains. They noted that limiting the movement of these cars to work trains would also be very expensive. In this regard, one commenter complained that the proposal would cause an even greater shortage of revenue cars and motive power and would result in more congestion.

Many railroads claimed that they have not had accidents caused by maintenance-of-way cars. Therefore, they contend that the cost of bringing those cars into compliance with Part 215 or restricting their movement to work trains cannot be justified.

FRA recognizes that maintenance-of-way cars are not freely interchanged among railroads and that the railroads are aware of the condition of these cars and impose restrictions on their operation to assure safe operation.

FRA has reconsidered its proposals regarding maintenance-of-way cars in light of the comments and testimony of interested persons. During this process, it considered the cost of bringing these cars into compliance with Part 215 against the safety benefit that would be derived. As a result, FRA has concluded that the substantial cost of bringing these cars into compliance with the standards and either replacing those that cannot comply or restricting their movement to work trains, cannot be justified at this time. FRA does not have data indicating that maintenance-of-way cars are causing accidents, injuries, and fatalities. However, FRA also recognizes

that good safety practice requires that some restrictions be placed on these cars. Accordingly, § 215.3(c)(3) of this final rule exempts maintenance-of-way cars from compliance with the new freight Car Safety Standards so long as those cars are not used in revenue service. A car in revenue service is one that is used to perform for-hire transportation services.

Definitions

Cracked and Broken

Under proposed § 215.5(b), "cracked" is defined, in pertinent part, as "broken or fractured without complete separation into parts."

Several commenters noted that including the word "broken" as one of the elements under the definition of "cracked" is confusing and seems to conflict with the definition of "break". One commenter suggested that the term "cracked" be defined as "fractured without complete separation into parts."

FRA agrees that the proposed definitions of "cracked" and "break" are confusing and has revised these definitions. In § 215.5 of the final rule, "cracked" is defined as "fractured without complete separation into parts" and "break" as "fractured with complete separation into parts."

Dedicated Service

Except for minor clarifying changes, the definition of "dedicated service" in proposed § 215.5(d) has been incorporated verbatim into § 215.5(d) of the final rule.

In Service

Proposed § 215.5(f) provides that a car is "in service" if it is on the property of a railroad, or within the control of a railroad, unless the car has "bad order" tags, is in a shop, or is on a repair track. Several commenters objected to this proposed definition. One commenter noted that Railroad A could be held responsible for a car in possession of Railroad B while it is on Railroad A's track under a trackage rights agreement or on a detour. Another felt the definition would only be acceptable if the safety standards were enforced in the same manner as the locomotive standards so that only those cars on an outbound track and those made ready for service would be considered to be "in service". Several commenters offered an alternative definition: A car should be considered to be "in service" only from the time it has been inspected and released for road movement until completion of road movement.

The RLEA supported the proposed FRA definition, stating that it would improve enforcement since it would no longer be necessary to wait until a defective car is coupled to the train.

Although FRA does not believe that the proposed definition of "in service" is unreasonable, it has revised the definition in the final rule in an effort to clarify the meaning of "in service". Section 215.5(e) of this final rule provides that a car is "in service" unless the car has "bad order" tags, is in a shop, is on a repair track, or is on a storage track and is empty. In this connection, it should be noted that the list of defective conditions in this final rule is limited to items, such as broken center plates and cracked wheels, that have been a cause of accidents, injuries, and fatalities. In light of the seriousness of these defects, railroads should regularly inspect their cars to determine whether any of these conditions is present. If a car has one or more of these defects, the car should be tagged for movement for repair or removed from service if it cannot be safely moved for repair. Thus, the definition of "in service" is intended to encourage the prompt discovery and repair or removal from service of unsafe cars before they cause an accident.

With respect to the comment regarding defective cars operated on the line of one railroad by another railroad under a trackage rights agreement, FRA would in such instances hold the railroad that operates the cars responsible under the Freight Car Safety Standards.

FRA does not agree that only cars on an outbound track and those made ready for service should be considered "in service". With the elimination of current requirements such as the periodic inspection, the periodic lubrication and repacking of bearings, and the reduction in the number of prohibited defects, FRA believes the railroads should focus their efforts on finding and repairing or removing from service all cars that have serious safety defects, regardless of where those cars may be situated.

Railroad

Proposed § 215.5(a) provides, in pertinent part, that a railroad includes any entity that "constructs, repairs, inspects, or otherwise maintains freight cars" subject to the proposed standards. This definition, as previously stated, includes any repair shop that performs periodic inspections. However, since the periodic inspection requirement is being eliminated, the definition of "railroad" has been revised. Section 215.5(f) of the final rule provides that a "railroad" is a common carrier by railroad.

Strict Liability

Under proposed § 215.7, a railroad would be subject to a penalty for failing to correct prohibited defects, regardless of whether it has knowledge of those defects. The main concern expressed by most railroads was that they felt it was unfair that they be held strictly liable for defects on cars over which they had never exercised control nor had an opportunity to inspect. They also contend that they should not be held strictly liable for undetected defects that develop during the course of their operations.

On the other hand, the Brotherhood of Railway Carmen asserted that strict liability is consistent with the legislative intent behind the 1970 Safety Act.

FRA does not agree with the railroads' contentions. First, as previously stated, a railroad would not be held responsible for defects on cars being operated over its track by another railroad. Second, the defects being retained in the final rule are particularly serious in nature so railroads should be continually on guard to discover these defects before they lead to serious accidents. This task should not be unreasonably burdensome in light of the numerous costly requirements that are being eliminated. Finally, FRA believes that if adequate pre-departure inspections are conducted and defective cars are tagged and repaired or removed from service, very few defects will occur during the conduct of normal operations. However, if these defects do develop during operations, a railroad can protect itself from liability by tagging the defective car and moving it for repair as prescribed in § 215.9 or removing it from service. Railroad inspection forces greatly outnumber the FRA and participating State inspectors engaged in monitoring railroad compliance with the Freight Car Safety Standards. If railroads effectively utilize their inspection forces, they are much more likely to find these defects before a Federal or State inspector would. Therefore, the strict liability provision has been retained in § 215.7 of the final rule.

Movement of Defective Cars for Repair

Proposed § 215.9 sets forth certain restrictions that would have to be observed when moving defective cars for repair. Among these restrictions are those requiring that a "bad order" tag describing each defect be attached to each side of the car and that defective cars discovered outside a yard be moved to the nearest point or the nearest forward repair point where repairs can be made. The restrictions on

movement of these cars would apply to any car having any defective component listed in proposed §§ 215.23 through 215.47.

Initially, it should be noted that Burlington Northern (BN) recommends that the word "terminal" be substituted for the word "yard." According to BN, the proposal is too restrictive and fails to take into account the fact that many railroad terminals have more than one yard. Surface Transportation International, Inc., specifically requested that FRA define the term "yard."

The railroads' comments emphasized that most of the current and proposed defective conditions on cars do not necessarily make them unsafe to move. They stated that their inspectors are qualified to make that judgment and to decide what restrictions should be imposed on the movement of defective cars.

The AAR submitted a list of defective conditions it considers to be critical from a safety standpoint and would preclude movement of cars with these defects. Included in this list were a missing lubricating pad in a plain bearing box; a defective plain bearing, plain bearing wedge, or roller bearing; and a broken roller bearing adapter. Several individual railroads concurred with this list.

According to commenter railroads, car owners, and private car companies, the nearest repair point is not always equipped to make specialized repairs. Consequently, temporary repairs would have to be made, only to be corrected at great expense at a major repair facility. Moreover, one railroad pointed out that tank cars can only be repaired at an AAR certified tank car repair facility.

Private car repair companies stated that they have made considerable capital investments at strategic locations and claim that there is a valid distinction between the kind and quality of work done at different facilities. One commenter noted that the proposed regulation could cause a sudden increase in volume of repair work that would exceed the capacity of repair facilities located on heavily trafficked corridors, while facilities elsewhere might have excess capacity.

On the other hand, the Brotherhood of Railway Carmen not only favored the proposed rules but wanted them strengthened. They stated that railroads should not be allowed to contract out their repair work to private shops which they contend have little knowledge of rail operations.

The RLEA recommended that, if a loaded car is moved, it should only be moved to the nearest point on the line of the handling railroad where repairs can be made in order to preclude interchange of defective cars.

As stated in the NPRM, FRA is concerned that cars tagged for repair may be moved considerable distances before needed repairs are made. However, FRA does not presently have data indicating that cars moved for repair have been a significant cause of accidents, injuries, and fatalities. Therefore, § 215.9 of this final rule does not adopt the proposed provisions that would have required that defective cars be repaired at the location where they are found to be defective or moved to the nearest point or the nearest forward point where needed repairs can be made. Rather, the final rule, like the current rule, prohibits movement of a defective car until a qualified person determines that it is safe to move the car and establishes the maximum speed and other restrictions necessary for safe movement. The addition of paragraph (c) to the final rule clarifies the scope of the movement for repair provision. The FRA is aware that the current section has been misconstrued to permit the use of defective cars in revenue service and movement of cars for repair by unnecessarily circuitous routes. This amendment makes it clear that a defective car may be moved only for the purpose of effecting repairs. Thus, if the car is empty it may not be placed for loading. A car which is already loaded when found defective may be placed for unloading prior to repair only if unloading is reasonably incidental to the movement for repair or the railroad finds that unloading is necessary for the safe repair of the car.

FRA believes that these conditions embody a balanced Federal approach that ensures the safe movement of defective cars without unduly restricting the railroads' choice of repair sites.

Since the proposed changes regarding "movement for repair" are not being adopted and the term "yard" has been deleted from the final rule, further discussion of the comments concerning the use of the term "yard" is not necessary.

Bad Order Tags

Some commenters stated that the proposal concerning bad order tags would create a hazard in that it would require inspectors to go between cars to attach the tag on both sides of the defective car. One commenter stressed that a single defect listed on the tag is sufficient to cause a car to be sent to the repair track. At that time, the car would be thoroughly inspected for other defects and all necessary repairs made.

In addition, Burlington Northern (BN) stated that applying the tag to both sides of the car would be too costly and would waste manpower, and that describing each defect on the card would be burdensome. BN further stated that it is necessary to tag one side of the car only, especially in light of industry use of computerized car movement records and surveillance.

Initially, it should be noted that the proposal to apply a "bad order" tag to each side of the car is identical to the rule currently in effect (§ 215.9(a)(3)). Moreover, FRA does not believe that this requirement is hazardous, costly, or burdensome, especially in light of the general industry practice to use a team of two persons to inspect trains. To expedite the inspection process, each person can inspect one side of the train. More importantly, a "bad order" tag is needed on each side of the car to ensure that its condition can later be identified from either side of the train. This, in turn, should help ensure that the car will be repaired as expeditiously as possible.

Section 215.9(a)(4) of the final rule adds a new requirement. It provides that upon request by a FRA or State inspector, a copy of the bad order tag shall be made available for inspection within 15 calendar days. The addition of this time limitation is intended to provide FRA with a mechanism to effectively monitor railroads' implementation of the movement for repair requirement.

Qualified Persons

The RLEA urged that only qualified persons designated under current § 215.15 should be permitted to determine whether a car is safe to move and allowed to remove bad order tags. It asserted that bad order tags are often removed even though the car has not been properly repaired. It recommended that persons removing tags improperly be personally fined.

Labor organizations also objected to the proposed deletion of current § 215.15 (qualified persons) for other reasons. They stated that, since FRA inspectors cannot be everywhere at all times, qualified railroad employees should be utilized as car inspectors. According to these commenters, a journeyman carman has the training and experience necessary to inspect freight cars. The Brotherhood of Railway Carmen noted that this had been worked out between railroads and labor organizations. Nevertheless, they contend that, in the absence of a qualified person requirement, railroads would use unqualified inspectors to inspect freight cars.

In response to the comments that the current rule regarding qualified persons (§ 215.15) should not be deleted, FRA

has decided to retain that rule (§ 215.11) in its current form. This decision is based on FRA's desire to encourage the use of qualified persons to inspect freight cars.

With respect to the comment that only qualified persons should be permitted to remove "bad order" tags, it should be noted that this requirement is currently in effect (§ 215.9(a)) and will be retained. FRA does not have legal authority to establish a regulation that would subject individual railroad officials or employees to fines for improperly removing a "bad order" tag. However, FRA notes that, if a tag is removed before the defective car is repaired, the railroad would be subject to a penalty for continuing in service a defective car.

Freight Car Components

Wear on Wheels

Under proposed § 215.23 (a) and (c), a car may not be continued in service if the flange of a wheel is worn to a thickness of ⅞ of an inch, or less, or if the rim of a wheel has a thickness of 1 1/16 of an inch, or less. Current § 215.43 (a) and (d) set minimum flange thickness at 1 5/16 of an inch and minimum rim thickness at ¾ of an inch. Thus, in the case of flanges and rims, the proposed standards would permit 1/16 of an inch of additional wear.

Several commenters opposed allowing this additional wear on flanges and rims. The Public Utility Commission of Oregon (Oregon Commission) and the Washington Utilities and Transportation Commission (Washington Commission) cited wheel failures as a significant cause of accidents. According to the National Transportation Safety Board (NTSB), there was no justification for the reduction in thickness on flanges and rims. It favors the current ¾ of an inch limit on rims. Another commenter objected to increased wear on wheel flanges contending that this would cause wheels to climb the rail. It was recommended that wear limits should be geared to the size of the wheel.

Conversely, the AAR and the railroads supported extension of wheel wear limits. They consider the current limits to be maintenance rather than safety limits. One railroad stated, in essence, that wheels would still be safe if worn beyond the proposed limits.

FRA does not agree with the commenters opposing the proposal to permit 1/16 of an inch additional wear on wheel flanges and rims. As stated in the NPRM, the former wear limits were developed at a time when cast iron wheels were in widespread use. Since that time, the introduction of steel wheels and improved manufacturing techniques have significantly improved the strength and durability of wheels. For these reasons, FRA believes that it is appropriate to permit the proposed increase in wear on wheel rims and flanges. It does not believe that these small increases will cause wheels to climb the rail or cause other problems. Accordingly, the wear limits set forth in the proposed rule have been incorporated in § 215.103 of the final rule. FRA emphasizes, however, that the new limits are absolute safety limits and will be rigidly enforced.

Cracked Wheels

NTSB notes that circumferential cracks in wheel plates would not be considered a defect under the proposed rule. It opposes this omission on grounds that any crack in a wheel plate can cause a wheel failure and lead to an accident. The Brotherhood of Railway Carmen took a similar position contending that any crack in a wheel indicates a weakness that could result in a wheel failure and a probable derailment.

On reconsideration, FRA agrees that any crack in a wheel could ultimately lead to a wheel failure. The structural integrity of a wheel is controlled by the compression and tension pattern set at the time of manufacture. The compression stress pattern of a wheel may be altered over time by braking and other force input. As a result of this change, a small crack may propagate rapidly and cause immediate danger to the structural integrity of the wheel.

Since there is no way to determine whether a small crack will or will not propagate to undermine the wheel, FRA is prohibiting use of a car with a wheel having a crack (§ 215.103(d)). This prohibition, however, does not extend to heat checks or chips in the tread area of the wheel. Heat checks or chips in the tread area generally do not indicate a weakness of the material that could result in a failure of the wheel. Consequently, they do not endanger the structural integrity of the wheel.

Overheated Wheels

Proposed § 215.23(i) provides that a car may not be continued in service if it has a wheel that "shows signs of being overheated as evidenced by a reddish brown discoloration, on the front or back face of the rim, that extends more than four inches into the plate area."

Several railroads objected to this proposed standard. It was recommended by one that the AAR rule on this subject should be adopted. Another commenter stressed that the proposed standard is inaccurate. According to that commenter, overheated wheels display a reddish discoloration on the plate and blue discoloration on the rim. Also, it was unclear to this commenter how the proposed 4 inch measurement would be made.

FRA does not agree that the proposed standards are inaccurate or that a reddish discoloration on the plate and a blue discoloration on the rim should be the standard for overheated wheels. FRA believes that such a discoloration standard would permit excessive heating of the wheel plates and unacceptable damage to the structural integrity of the wheels. Stated otherwise, such a discoloration standard would provide a significantly lower margin of safety. Wheel failures and derailments are imminent whenever wheels have been subjected to such excessive heating.

On the other hand, the proposed standard relies solely on reddish brown discoloration as the measure of overheating that could change the metallurgical structure of the wheel. As this discoloration extends further into the plate of the wheel, the danger of sudden wheel failure increases. Therefore, the proposed standard has been adopted in § 215.103(h) of the final rule.

The same rationale applies to that portion of the proposal that would not permit the discoloration to extend more than four inches into the wheel plate. Experience indicates that if the discoloration is permitted to extend beyond the limit proposed, failure of the wheel is imminent. Accordingly, § 215.104(h) of the final rule clarifies this portion of the proposal by specifying that the 4 inch measurement is to be made from the bottom of the back face of the rim.

Welding of Wheels

Under current § 215.43(m), any welding on a wheel is described as a defect. This provision was not included in the proposed standards. The Oregon Commission asserts that the welding of wheels should be prohibited. According to the Oregon Commission, a careless arc strike could pit the bearings and lead to a wheel failure.

While FRA agrees that improper or careless welding could lead to serious wheel damage, it notes that welding, if done properly, would not result in such damage. However, FRA also recognizes that creation of proper welding conditions in the railroad operating environment would be so inordinately expensive that it is impractical. A large part of that expense would derive from the process of preheating the wheel, a lengthy but necessary process for proper

welding. For this reason, FRA will allow welding of wheels only as an emergency repair measure to enable the car to be moved to a repair facility. Accordingly, under § 215.103(i) of the final rule, a welded wheel is not a prohibited defect if the car is tagged and being moved for repair in accordance with § 215.9.

Circumferential Grooves

Current § 215.43(j) provides that a wheel is defective if it has "[a] circumferential groove in the tread more than one-eighth inch in depth." This provision was not included in the proposed standards.

The Oregon Commission states that the standards should indicate at what point a circumferential groove becomes a hazard. Similarly, the Washington Commission opposes deletion of the current rule prohibiting a circumferential groove ⅛ of an inch in depth or more. It states that deletion of this standard could lead to a reduction in the structural integrity of wheels. Both indicate that these grooves are prevalent on cars equipped with composition brake shoes.

FRA does not agree with the commenters contending that a wheel with a circumferential groove should be prohibited. Unlike other conditions, FRA does not believe that these grooves are serious enough to justify removing a car from service. Moreover, the accident data compiled by FRA does not indicate that wheels with circumferential grooves are a safety problem.

Wheels with Scrapes, Dents, or Gouges

Under current § 215.43(k), a wheel is defective if it has "[a] scrape, dent, or gouge in the wheel plate surface more than one-eighth inch deep that causes an abrupt change in the finish of the plate surface." This provision was also omitted from the proposed standards.

The Washington Commission opposes, on grounds of structural soundness, the elimination of the current prohibition of wheels with a scrape, dent, or gouge. Moreover, the Oregon Commission asserts that the standards should specify at what point these conditions will render the wheel structure unsound.

As previously noted, the proposed rules, unlike the current rules, do not provide that a wheel is defective if it has a scrape, dent, or gouge in the plate area. These conditions were not included in the proposed rules because they are extremely difficult to discover during a pre-departure inspection. No defects of this nature were reported by FRA and participating State inspectors during the past three years. Accordingly, FRA has omitted these conditions from the final rule.

Axles

The NTSB expressed opposition to proposed § 215.25 (a), which provides that a car may not be continued in service if an axle on the car has a radial crack or is broken. NTSB contends that axles normally crack in a transverse, rather than a radial, manner.

FRA agrees. Moreover, the term "radial crack" has generated considerable confusion among the commenters. Accordingly, FRA has revised the proposed rules pertaining to axles to provide that an axle with any crack is defective. Thus, with respect to cracked axles, § 215.105 of the final rule will be identical to the current rule.

Plain Bearing Box Lids

Under proposed § 215.27(b), a railroad may not continue in service a car with a plain bearing box lid that is missing, broken, or otherwise not preventing contaminants from entering the box.

Maine Central Railroad opposes this prohibition to the extent that it applies to a box lid that is "not preventing contaminants from entering the box." It contends that this standard is too vague since the seal between the box lid and the journal box at no time can be made perfect, particularly if the journal box lid is not equipped with a seal.

As noted by one commenter, the proposed rules would require that a car be removed from service if it has a plain bearing box lid that does not prevent contaminants from entering the box.

The confusion concerning this proposed requirement derives from both FRA's use of the term contaminant and its failure to make clear the intent of the proposal. Accordingly, the term contaminant has been deleted from the final rule. In addition, proposed § 215.27(b) has been revised and redesignated as § 215.107(b) of the final rule. It provides that a railroad may not place or continue in service a car with a plain bearing box lid that is missing, broken, or open except to receive servicing. The intent of the proposal was not to require a perfect seal between the lid and the journal box. Rather, it was to ensure that the lid would be in place and secure enough to prevent free entry of foreign matter that could damage the bearings and lead to a "hot box" that could ultimately result in a derailment. FRA believes that the clarified plain bearing box lid requirement in § 215.107(c) of the final rule is both reasonable and necessary to assure safety.

Repack and Lubrication of Bearings

Current §§ 215.97 and 215.99 require periodic repacking of plain bearing boxes and periodic lubrication of roller bearings. These requirements were not included within the proposed standards.

Several commenters favored retention of the current provision requiring a periodic lubrication of roller bearings. Also, the Lubricator Pad Manufacturers Group felt that the current 24-month repack requirement for plain bearing boxes is the most satisfactory. It expressed concern that the industry would not be able to enforce the maintenance required for good solid bearing performance and that an increase in hot boxes and derailments would result.

In addition, the Alabama Public Service Commission favors retention of the current repack intervals for plain bearing boxes. The Commission explains that components in the journal box need to be removed for adequate inspection.

FRA does not agree that these requirements should be retained. Field test results indicate that roller bearings can remain in service for extended periods of time without being re-lubricated. At the same time, it should be noted that roller bearings will be indirectly regulated as a result of the rules prescribing wear limits for wheels. Specifically, when wheels reach condemning limits, they will have to be removed. At this time, the bearings can be examined for defects and, if necessary, removed from service. In sum, FRA believes that the bearings will function properly for the life of the wheel without additional lubrication. Accordingly, the current requirement is being deleted from the standards.

With respect to plain bearings, FRA is shifting from an arbitrary requirement to repack the bearing box to performance standards. Under the new standards (§§ 215.107–111), critical bearing components are required to be in good condition. For example, the box must contain free oil and be free of excessive foreign matter, and the lubricating pad must be in proper condition. These and other related requirements make the current repack requirement unnecessary from the standpoint of safety. In fact, FRA believes that the new performance standards are superior to the current repack requirement because they stress that the critical bearing components must be in good condition at all times. Accordingly, the current repack requirement is not being retained.

Plain Bearing Wedge

The Oregon Commission states that a car should not be continued in service if it has a plain bearing wedge that is out of place.

FRA agrees with the Oregon Commission. If a car with a plain bearing wedge out of place is continued in service, uneven load distribution in the contact area between the bearing and journal box will result, thus creating the risk of overheating that could cause a derailment. For these reasons, § 215.113 of the final rule requires removal of a car from service with a plain bearing wedge out of place.

Roller Bearings

Proposed § 215.35(a)(3) provides that a railroad may not continue in service a car that has a roller bearing with a loose, damaged, or nonfunctioning seal that permits loss of lubricant. Maine Central opposes the prohibition of roller bearings with a "nonfunctioning seal that permits loss of lubricant." It asserts that a minimal loss of lubricant does not indicate unsafe conditions. It favors using AAR Interchange Rule 36, which deals with unsafe seal conditions, as a standard.

While a minute loss of lubricant through "seepage or weepage" of lubricant around a roller bearing seal may not be hazardous, FRA notes that proposed § 215.35(a)(3) provides that the seal must be "loose, damaged, or nonfunctioning" to be considered defective. If any of these conditions exists, FRA believes that the loss of lubricant would be excessive and warrant taking a car out of service. Accordingly, the proposed rule has been adopted, with only a minor editorial change, in § 215.115(a)(3) of the final rule. The phrase, "nonfunctioning seal that permits loss of lubricant," has been revised to read a seal that "permits leakage of lubricant in clearly formed droplets."

Derailed or Submerged Bearings

Proposed § 215.35(b)(2) provides, in pertinent part, that "[e]ach roller bearing that has been submerged in water, and each roller bearing involved in a derailment, must be disassembled from the axle for inspection."

Western Pacific Railroad Company objected to the proposed test procedure for these bearings. Western Pacific contends that the proper procedure is to jack up the truck side frame, rotate the bearing, and listen and feel for irregularities. The Santa Fe stated that defective bearings have externally visible defects. It also opposes the proposed standard. Rather, it supports AAR Rule 36 A.1 (June 1, 1978).

These commenters apparently believed that defects can be discovered without disassembly of the bearing from the axle. FRA does not agree entirely. Although the initial procedure for low speed (10 miles per hour or less) derailed bearings is a visual examination of the bearings and rotation of the wheel set, disassembly should be required if this procedure reveals any irregularity, such as evidence of damage or unusual noise.

FRA believes that each wheel set of a truck involved in a higher speed (more than 10 miles per hour) derailment, or dragged on the ground for more than 200 feet should also be disassembled. Defects caused by these derailments cannot be discovered without disassembly of the bearing from the axle. Otherwise, internal fractures of the rollers and racers, or any other serious internal damage to the bearings cannot be detected. Also, bearings should be disassembled to detect pitting which could lead to cracking and ultimate failure of the bearings. For these reasons, the "disassembly" requirement for derailed bearings is being retained in § 215.115(b) of the final rule.

On further consideration, FRA has decided not to regulate roller bearings that have been submerged in water because it does not have data to indicate that submerged bearings deteriorate to the point where their functional integrity is adversely affected.

More than two years ago, 4,800 Norfolk and Western (N&W) cars were submerged in approximately fourteen feet of water for several days. N&W operated about 2,300 of those cars during the last two years, while gradually replacing their bearings. Specifically, the bearings of approximately 800 cars were changed during the first nine months and the bearings of the remaining 1,500 cars were changed during the next fifteen months. Thus, some cars were operated for as long as two years before receiving a bearing change. None of the bearings on 2,300 cars failed nor showed signs of deterioration, although some did have water marks or etchings or other minor imperfections. While this one case does not conclusively establish that water has no deteriorative effect on roller bearings, it does reveal that further observation is necessary before FRA can determine whether or not submerged bearings present a safety hazard. Therefore, FRA has not included submerged bearings in the final rule. However, FRA will continue to monitor the safety performance of submerged bearings.

Roller Bearing Adapter

The Oregon Commission opposes continuing a car in service with a roller bearing adapter that is out of place or wearing into a truck side frame.

The Washington Commission supports a prohibition against use of cars with roller bearing adapters out of place. It also favors a prohibition against excessive wear on the crown of the adapter. Such a prohibition is contained in § 215.95(c) of the current rules but was omitted from the proposed rules. In support of its position, the Commission notes that six percent of all derailments reported were caused by journal bearing failures.

FRA agrees that a car should be removed from service if it has a roller bearing adapter that is out of place. Also, excessive wear on the crown of the adapter is serious enough to warrant taking a car out of service. Either condition could cause uneven load distribution on the bearing and thus result in bearing failure, which could lead to a derailment. Therefore, § 215.117 of the final rule requires removal from service of a car that has either a roller bearing adapter that is out of place or excessive wear on the crown of the adapter.

Snubbing Devices

Proposed § 215.39(b) provides that a railroad may not continue in service a car that has a truck equipped with snubbing units, attachments, or wear plates that are worn to the extent that the snubbing is ineffective or contains snubbing units that are broken.

Trailer Train disagreed with the inclusion of snubbing ineffectiveness as a critical defect. Pullman Leasing Company noted that measurable wear limits based on safety should be used rather than the vague term "ineffective."

With respect to reconditioned cars, Pullman notes that proposed § 215.71(b)(7)(ii) would require that those cars have hydraulic snubbing units that are free of defects, including leakage of hydraulic fluid. It asserts that leakage does not necessarily make a snubbing unit defective. As a substitute for this leakage test, it recommends a standard requiring observation of the fluid level or qualification testing in accordance with the manufacturer's recommended procedures.

Initially, it should be noted that the terms snubbing units, attachments, and wear plates, where used collectively, have been consolidated into one term, snubbing device. With regard to leakage, FRA feels that leakage of

snubbing devices is not hazardous so long as that leakage is not so excessive that it will render the device inoperative. Thus, a leaking snubbing device is not considered to be defective if that leakage does not amount to clearly formed droplets.

On the other hand, FRA disagrees with a commenter's contention that ineffective snubbing should not be considered a critical defect. A car that has ineffective snubbing, or broken snubbing devices, will respond more violently to track irregularities and may cause a derailment. Therefore, § 215.119(b) of the final rule does not permit a car to be continued in service if it has ineffective or broken snubbing devices.

Broken Body Bolster

The Oregon Commission recommends that a car should be taken out of service if the bolster is broken so badly that there is no side bearing clearance or the bolster is broken down to the point where the side sill of the car is riding on top of the truck side frame. This position was echoed by the Washington Commission.

FRA agrees with these comments. Accordingly, § 215.121(f) prohibits broken body bolsters.

Side Bearings

Proposed § 215.39(c) provides that a railroad may not continue in service a car having side bearings in any of the following conditions: (1) A car truck side bearing assembly is missing or broken; (2) The bearing at one end of the car, on both sides, is in contact with the body bolster (except by design); (3) The bearing at one end of the car has a total clearance from the body bolster of more than three-fourths of an inch; or (4) At diagonally opposite sides of the car, the bearings have a total clearance from the body bolsters of more than three-fourths of an inch.

The Oregon Commission asserts that loose side bearings are a serious enough defect to warrant taking a car out of service. In addition, the Washington Commission contends that a car should not be used if it has a side bearing that is missing, broken, or insecure.

FRA agrees that a missing or broken side bearing is serious enough to warrant taking a car out of service. FRA's concurrence stems from the knowledge that a missing or broken side bearing generates an uneven load distribution in the suspension system that could shift the lading. This in turn would cause the car to sway and derail. As previously noted, § 215.39(c) of the proposed rules would require cars with this defect to be removed from service. Accordingly, this requirement has been included, with editorial changes, in § 215.119(c) of the final rule.

On the other hand, FRA has not included a provision that would prohibit the use of a car with loose side bearings. There is no indication that loose side bearings pose the same risk occasioned by missing or broken side bearings. Moreover, such a requirement would not be realistic in light of the fact that the bearings are attached from inside and if loose would not be apparent to railroad personnel or FRA or State inspectors.

Truck Springs

Under proposed § 215.39(d)(3), one broken truck spring is not a defect. One labor organization asserted that one broken truck spring constitutes a safety hazard because it would put an abnormal load on the other springs.

FRA does not agree. One broken truck spring in a cluster does not create enough of an uneven load distribution to warrant removal of a car from service. Therefore, under § 215.119(d) of the final rule, a car would have to be removed from service if it has more than one broken truck spring within any cluster.

Center Sills

Under proposed § 215.41(b)(2), a railroad may not place or continue in service a car having a cracked center sill.

The AAR, NTSB and other commenters contend that cracked center sills are not critical, though broken ones could be.

FRA does not entirely agree. FRA believes that a center sill that is cracked more than 6 inches is hazardous because it may undermine the integrity of the sill or propagate rapidly and thus result in a break. Likewise, FRA believes that a broken center sill is hazardous and warrants removal of a car from service. Both of these conditions create the danger of train separation. Therefore, § 215.121(b) of the final rule prohibits continuing a car in service if that car has a center sill that is broken or cracked more than 6 inches.

Brake Hangers

The Public Service Commission of West Virginia (West Virginia Commission) contends that broken or missing hangers or pins should be regulated in Part 215 since brake hangers and safety supports are part of the trucks.

FRA currently is developing a notice of proposed rulemaking to revise its Power Brake Standards. As part of this process, it will consider brake hangers and pins. Therefore, the comment on this subject will be retained and considered in connection with the revised Power Brake Standards.

Safety Hangers for Car Doors

AAR requested a six-month extension to permit the railroads to comply with proposed § 215.41(d), which would require that the side doors on box cars be equipped with safety hangers.

FRA believes that this request is reasonable. Therefore, § 215.121(d) of the final rule provides this extension.

Center Plates

The West Virginia Commission urges the prohibition of broken center plates stating that a broken plate puts stress on the body bolster and will eventually cause the car to ride hard on the side bearings.

FRA agrees with the West Virginia Commission that broken center plates should be included in the listing of prohibited conditions. If a car with a broken center plate is continued in service, the truck could easily become disengaged from the body and cause a serious accident. Accordingly, § 215.121(e)(3) of the final rule provides that a car may not be placed or continued in service if it has a broken center plate.

Further, it is the view of FRA that certain cracked center plates should also be included in the listing of prohibited conditions. It is difficult to accurately determine whether or not these cracks will spread to result in a break. Thus, these cracked center plates pose potentially the same risk as broken ones. Therefore, § 215.21(e)(4) of the final rule prohibits placing or continuing in service a car with a center plate that has two or more cracks through its cross section (thickness) at the edge of the plate that extend to the portion of the plate that is obstructed from view while the truck is in place.

Couplers

The West Virginia Commission favors prohibiting use of a car with a missing or broken coupler lock-lift. It asserts that this condition is hazardous since, if present, it would require workers to cross between cars to uncouple them. Further, it asserts that for the same reason a car should not be used if an uncoupling device is missing.

The Oregon Commission favors removing a car from service if it has any defective coupler, including a defective Type E coupler. The Commission notes that DOT Specification 112 and 114 tank cars that carry hazardous materials are required to be equipped with shelf Type E couplers and head shields. The Type E couplers and head shields on these cars are designed to help prevent hazardous

materials accidents. The Oregon Commission and the Washington Commission also favor a standard providing that a car must be taken out of service if it has a cracked, broken, or inoperative coupler lock-lift.

Additionally, the Washington Commmission opposes use of a car having an AAR adopted coupler carrier that is missing or broken. Like the Oregon Commission, the Washington Commission notes that the proposed rule applies to Type F couplers only.

RLEA favors retention of the current requirement regarding excessive wear and defective interlocking features on couplers. According to RLEA, these defects could lead to coupler disengagement while a train is in transit.

On reconsideration, FRA generally agrees with the comments favoring removal of a car from service if it has a defective coupler lock-lift or a missing uncoupling device. Thus, it is incorporating into the new standards (§ 215.123) the provisions of current § 215.173(c). Under the terms of that section, a coupler is considered defective if it has an inoperative lock-lift, the assembly lacks anticreep protection, or a coupler lock is missing, inoperative, bent, cracked, or broken. The anticreep protection should be capable of preventing unintentional unlocking of the coupler lock; this requirement replaces the current one that provides that the lever on a bottom operated coupler must have at least one-fourth inch clearance between the operating rod eye and the locklift lever when the coupler is centered and the knuckle is fully closed and locked. Also, if a coupler lock is missing or defective, the coupler will not lock. These defects are considered serious enough to warrant their insertion in the final rule.

With regard to the comments supporting removal of a car from service if it has a defective Type E coupler, FRA notes that proposed § 215.43 (defective couplers) applies to all couplers and does not distinguish between Type E and Type F couplers. This section has been incorporated into § 215.123 of the final rule with the additional provisions that are discussed above.

Follower Plates and Draft Lugs

Current § 215.193 provides, in pertinent part, that a draft arrangement is defective if it has a missing (except by design) or broken follower plate, draft lugs or fasteners. This provision is not included in proposed § 215.47 (defective draft arrangement).

The Oregon & Washington Commissions contend that a car should be taken out of service if it has a missing (except by design) or broken follower plate, draft lugs or fasteners.

FRA agrees that these conditions are serious enough to warrant regulation. Since these components contribute significantly to the structural integrity of the draft system, the absence or break of any one part could cause a train to break in two while in motion. Accordingly, FRA has incorporated into § 215.127 of the final rule the applicable provisions of current § 215.127 of the final rule the applicable provisions of current § 215.193 that prohibit these defects.

Inoperative Sliding Sill

Under proposed § 215.47(c), a railroad may not continue in service a car having a sliding sill that is inoperative.

Maine Central Railroad believes that a car with a properly blocked sliding sill should be permitted to move to the home shop for repair. Because of varying designs of cushioning units not every repair point can be equipped to make permanent repairs to all cars.

FRA agrees that a car with a properly blocked sliding sill should be permitted to be moved for repair. In this connenction, it points out that, under § 215.9 of the final rule (movement for repair), a car with a defective sliding sill, or any other defect, can be moved only for repair if a qualified person finds that it can be safely moved, establishes the restrictions to ensure a safe movement, and the other requirements prescribed in that section are complied with.

Cushioning Units

Under proposed §§ 215.63 and 215.71, cushioning units would be considered defective if leaking oil or other fluid.

Hydraulic unit manufacturers disagreed with this proposed standard. They stressed that some leakage is inevitable. One commenter urged that the term "leakage" be omitted. Another commenter suggested that the term "leakage" be clarified by defining it as "clearly formed droplets adhering to or dropping from the cushioning unit or the car structure surrounding the cushioning unit." This would prevent grease from being mistaken as oil.

With respect to cushioning units, Maine Central pointed out that by design a small amount of seepage is allowed for lubrication of the seal and does not render the unit inoperative or unsafe. Also, Maine Central asserts that a car with an inoperative cushioning unit should be allowed to move to the home shop for repair if the unit is properly immobilized.

On reconsideration, FRA agrees that a cushioning unit should not be considered defective if it is losing only a minute amount of fluid through "seepage or weepage". FRA is primarily concerned about an excessive loss of fluid that could render the cushioning unit inoperative. This condition can lead to violent slack action in trains that could cause serious injuries and derailments. Accordingly, to guard against this hazard while at the same time recognizing that a negligible loss of fluid may be inevitable, § 215.127(c) of the final rule provides that a leaking cushioning unit is defective if it is leaking fluid in clearly formed droplets. Thus, a minute loss of fluid through "seepage or weepage" would be permitted, but a larger loss of fluid that could render the unit inoperative would not be allowed.

Regarding movement for repair with an inoperative cushioning unit, again, FRA notes that this practice would be permitted, if it is determined that the movement can be conducted safely and the other conditions in § 215.9 of the final rule are met.

Draft Gear

The West Virginia Commission urges that a draft gear with the support missing or not secured should be prohibited. The Commission pointed out that when the support fails (drops off), the coupler height changes and the draft gear could fall out of the yoke.

On the other hand, the AAR, NTSB and other commenters, contend that free slack in the draft gear is not an unsafe condition.

With regard to the comment that a car should be taken out of service if it has a draft gear that is not secured or is missing support, FRA generally agrees. The draft arrangement regulates the functional integrity of the draft system. A defective draft arrangement could cause the draft system to malfunction which, in turn, could result in the train breaking in two.

FRA also agrees that free slack in a draft gear does not constitute an imminent safety hazard. Unlike a draft gear that is not secured or is missing support, free slack in a draft gear does not create an imminent danger of train separation. Therefore, FRA has included in § 215.127 of this final rule, a provision requiring that a car be taken out of service if it has a defective draft arrangement including a broken yoke, a missing or broken follower plate, or an inoperable draft gear.

Prohibited and Restricted Equipment

Subpart C is being revised in the final rule. The two lists of components and other factors that preclude a freight car from being used without prior FRA

approval are being consolidated into a single list. In addition, the one-wear, 70-ton Southern (ABEX) U1 cast steel wheels that were ordered removed from all cars by FRA Emergency Order No. 7 have been added to the list of restricted components. Finally, some of the procedural and policy guidelines governing requests for FRA approval have been deleted as surplusage since they are also contained in the FRA Rules of Practice (49 CFR Part 211).

Civil Penalty Policy

FRA announced in the preamble accompanying the proposed standards that the final rule would include a revised penalty schedule equating the amount of penalties to be assessed with the nature and degree of violations.

Several commenters suggested that fines currently being assessed should be lessened. Others approved of having the amount of the penalty reflect the seriousness of the violation. Rail unions stated that larger fines should be imposed to encourage compliance with the new standards. According to the unions, the railroads simply write off the current fines as an operating expense.

Regarding the amount of fines assessed, FRA wishes to point out that its discretion is limited by the provisions of the Federal Railroad Safety Act, as amended. Section 209 of the Act (45 U.S.C. 438) provides that penalties for violations of rules and regulations shall be not less than $250 or more than $2,500.

The purpose of civil penalties is to promote future compliance with the regulations. Existing penalty levels under the standards replaced by this final rule have proven inadequate to produce significant impacts on the compliance records of many railroads. Further, because FRA can discover and process only a small fraction of all violations that occur, it is important that penalties actually assessed be substantial. Finally, the defects defined in the rule are all of a serious nature, while some of the defects under the current regulations involve the failure to undertake preventive maintenance.

Therefore, Appendix B of the final rule prescribes substantial penalties for violations of the standards. Where gradations of noncompliance could be described in objective terms, appropriate distinctions have been made in the penalty levels. In general, the highest penalties have been reserved for conditions which have contributed significantly to the train accident rate and for conditions which, although infrequent in incidence, clearly present a high probability of derailment.

The railroads exercise control over the level of compliance with freight car safety standards through their determination of repair points, deployment of car inspectors, and management of car rehabilitation programs. Under these circumstances, basing a violation on knowledge of the defective condition encourages ignorance and neglect. It is FRA's experience that the knowledge requirement (§ 215.7) of the current standards has had that effect. Thus, it has been necessary to adopt a rule of strict liability for violations of the revised standards.

Moreover, higher penalties are provided where the circumstances indicate violations to be intentional. An intentional violation is the knowing and willful failure of a railroad to comply with the provisions of this final rule. The knowledge required for an intentional violation is knowledge of the facts constituting the violation. Knowledge of the regulations is presumed by law. There are two instances that are *prima facie* evidence that a violation was knowing and willfull: first, evidence that a violation has been committed or has been allowed to continue after an FRA or State inspector has provided the railroad notification of a deviation from the requirements of the standards; and second, where any repair has been made to the freight car component in question, but that component was not brought into full compliance with the standards.

Under the penalty schedule, the freight car (as opposed to individual deviations from the standards of individual components of the car) remains the essential unit of violation. However, the schedule provides that the penalties associated with individual deviations from the standards will be combined up to a total of $2,500 if two or more violative conditions are detected on a single car.

FRA will assess civil penalties whenever a freight car is found to have been utilized in a way giving rise to a hazard proscribed by the standards or whenever the circumstances point to the likelihood that a car would be so utilized, absent FRA intervention. For instance, FRA will not hesitate to assess violations for excessively worn wheels discovered in inbound trains. The final rule allows sufficient wear beyond AAR condemning limits for the wheels to be removed before they become defective under the standards. Similarly, FRA will not hesitate to assess violations with respect to defective cars returned to service after having been on a repair track. Even if a particular defect is of the kind not likely to cause a derailment in a low-speed yard movement, FRA will assess a penalty based on the likelihood that a defect not discovered on a repair track is even less likely to be discovered in a pre-departure inspection.

In contrast to past custom, FRA will also assess penalties for defective cars in any outbound train that is prepared for departure. FRA (or the participating State) will then provide notification of the proposed penalty action and relevant car numbers to the railroad as soon after completion of the FRA inspection as a railroad representative can be located. Merely providing the car numbers to the railroad without assessing penalties would transform FRA and State inspectors into servants of the railroads. On the other hand, permitting the trains to run with defective cars, while a practice endorsed by the courts as a necessary measure under other statutes, would expose the public to hazard unnecessarily. Thus, FRA will penalize defects before they give rise to actual injury.

It should be emphasized that the above examples are not exhaustive of the situations in which civil penalty action may be appropriate. FRA expects that the railroads, having been relieved of unnecessary regulatory burdens, will take whatever action may be necessary to prevent the development of avoidable defects and to timely discover the presence of those that may be unavoidable.

Defect Code

FRA has included in Appendix C of this final rule a freight car defect code. The code number generally corresponds to the section number of each defect proscribed by the final rule. The purpose of this code is to establish a universal language among FRA, States, and the railroad industry that will facilitate communication, recordkeeping, and statistical analyses. Railroad personnel should note that the code may not be substituted for the description of defects on bad order tags affixed to cars being moved for repair under § 215.9. However, it may be used to supplement that description.

Reporting Safety Violations

The Brotherhood of Railway Carmen asserts that supervisors threaten employees with dismissal when the latter attempt to comply with the existing standards. It favors development of a means for employees to report safety violations to FRA without fear of dismissal. Also, it contends that employees should be permitted to refuse to operate unsafe

equipment without having to worry about loss of their jobs.

First, FRA wishes to point out that, on numerous occasions in the past, it has received reports of alleged safety violations from railroad employees. FRA has treated these complaints in strictest confidence and will continue to do so. However, FRA believes that the establishment of a formal procedure to protect employees reporting alleged violations, or permit employees to refuse to operate allegedly unsafe equipment, would result in FRA's becoming involved in numerous labor-management disputes. FRA believes that these disputes should be resolved by the collective bargaining process.

Caboose Crashworthiness

In the preamble accompanying the proposed Freight Car Safety Standards, FRA announced that it is considering crashworthiness standards aimed at upgrading the structural integrity of new caboose cars. Reacting to this approach, several commenters suggested that the way to lessen the possibility of injuries sustained while in a caboose is either to have the caboose at the middle of the train or to eliminate it entirely.

FRA is presently conducting tests at its test center in Pueblo, Colorado to determine whether it would be appropriate to propose standards for the crashworthiness of cabooses. Once all the test data have been collected and analyzed, a decision regarding the need for rulemaking will be made. Therefore, FRA believes that it would be premature to discuss possible crashworthiness standards at this time. However, the comments submitted concerning this topic will be retained and considered in connection with any future rulemaking action that may be taken.

Comments Beyond Scope of Notice

Several parties submitted comments that are considered beyond the scope of the notice of proposed Freight Car Safety Standards. These included comments concerning performance, design, and construction standards for freight cars, an on-board monitoring system for bearings, and standards regulating the loading of open-top freight cars.

These comments and others considered beyond the scope of the notice will be retained and considered, to the extent applicable, in connection with future rulemaking proceedings.

Economic Impact

FRA has determined that this document does not contain a significant regulation. Therefore, a Regulatory Analysis under Executive Order 12044 is not required (E. O. 12044, 43 FR 12661, March 24, 1978).

However, FRA did prepare a regulatory evaluation of the proposed regulation and has revised that evaluation in light of the comments received and the changes made in the final rule, in accordance with DOT policies for evaluation of regulatory impacts (Regulatory Policies and Procedures, 44 FR 11034, February 26, 1979). A copy of each regulatory evaluation has been placed in the public docket for this proceeding.

Environmental Impact

On March 16, 1979, the FRA published (44 FR 16062) revised procedures for insuring full consideration of the environmental impacts of FRA actions as required by the National Environmental Policy Act ("NEPA", 42 U.S.C. 4321 *et seq.*), the Department of Transportation Act ("DOT Act", 49 U.S.C. 1651 *et seq.*), other environmental statutes, executive orders, and DOT Order 5610.113.

These FRA procedures require that an "environmental assessment" be performed prior to all major FRA actions. The procedures contain a provision that enumerates seven criteria which, if met, demonstrate that a particular action is not a "major" action for environmental purposes. These criteria involve diverse factors, including environmental controversiality; the availability of adequate relocation housing; the possible inconsistency of the action with Federal, State, or local law; the possible adverse impact on natural, cultural, recreational, or scenic environments; the use of properties covered by Section 4(f) of the DOT Act; and the possible increase in traffic congestion.

This amendment meets the seven criteria that establish an action as a non-major action. Accordingly, the FRA has determined that the amendment of Part 215, Freight Car Safety Standards, does not constitute a major action requiring an environmental assessment.

Effective Date

As stated at the beginning of this preamble, with the exception of § 215.15, this final rule becomes effective on March 1, 1980. However, to the extent that the final rule imposes new or more stringent requirements than the current standards, prior compliance is authorized and encouraged.

Section 215.15, the periodic inspection requirement, is effective immediately upon publication in the Federal Register. This section extends the deadline for accomplishing initial periodic inspections of freight cars from December 31, 1979 to June 30, 1980. This action is being taken to avoid the hiatus between the current and new deadline that would otherwise occur. Thus, this action protects railroads against the possibility of penalty for those cars that have not received periodic inspections as of December 31.

This action imposes no additional regulatory burden and is being accomplished solely to respond to the problem being encountered by various railroads in completing the inspection program within the time constraint of the current regulatory provision. Therefore, § 215.15 is not subject to the thirty day notice requirement and is effective immediately upon publication.

In consideration of the foregoing, Part 215 (49 CFR Part 215) is revised to read as follows:

PART 215—RAILROAD FREIGHT CAR SAFETY STANDARDS

Subpart A—General

Sec.

215.1 Scope of part.
215.3 Application.
215.5 Definitions.
215.7 Prohibited acts.
215.9 Movement of defective cars for repair.
215.11 Designation of qualified persons.
215.13 Predeparture inspection.
215.15 Periodic inspection.

Subpart B—Freight Car Components

215.101 Scope.

Suspension System

215.103 Defective wheel.
215.105 Defective axle.
215.107 Defective plain bearing box: general.
215.109 Defective plain bearing box: journal lubrication system.
215.111 Defective plain bearing.
215.113 Defective plain bearing wedge.
215.115 Defective roller bearing.
215.117 Defective roller bearing adapter.
215.119 Defective freight car truck.

Car Bodies

215.121 Defective car body.

Draft System

215.123 Defective couplers.
215.125 Defective uncoupling device.
215.127 Defective draft arrangement.
215.129 Defective cushioning device.

Subpart C—Restricted Equipment

215.201 Scope.
215.203 Restricted cars.

Subpart D—Stenciling

215.301 General.
215.303 Stenciling of restricted cars.
215.305 Stenciling of maintenance-of-way equipment.

Appendices

Appendix A—Railroad freight car components.

Appendix B—Schedule of civil penalties.
Appendix C—FRA freight car standards defect code.

Authority: Secs. 202 and 209, 84 Stat. 971 and 975, 45 U.S.C. 431 and 438; and Sec. 1.49(n) of the regulations of the Office of the Secretary of Transportation, 49 CFR 1.49(n).

Subpart A—General

§ 215.1 Scope of part.

This part prescribes minimum Federal safety standards for railroad freight cars.

§ 215.3 Application.

(a) Except as provided in paragraphs (b) and (c) of this section, this part applies to each railroad freight car in service on—

(1) Standard gage track of a railroad; or

(2) Any other standard gage track while the car is being operated by, or is otherwise under the control of, a railroad.

(b) Sections 215.15 and 215.303 of this part do not apply to any car—

(1) Owned by a Canadian or Mexican Railroad; and

(2) Having a Canadian or Mexican reporting mark and car number.

(c) This part does not apply to a railroad freight car that is—

(1) Operated solely on track inside an industrial or other non-railroad installation; or

(2) Used exclusively in dedicated service as defined in § 215.5(d) of this part; or

(3) Maintenance-of-way equipment (including self-propelled maintenance-of-way equipment) if that equipment is not used in revenue service and is stenciled in accordance with § 215.305 of this part.

§ 215.5 Definitions.

As used in this part—

(a) "Break" means a fracture resulting in complete separation into parts;

(b) "Cracked" means fractured without complete separation into parts, except that castings with shrinkage cracks or hot tears that do not significantly diminish the strength of the member are not considered to be "cracked";

(c) "Railroad freight car" means a car designed to carry freight, or railroad personnel, by rail and includes a—

(1) Box car;
(2) Refrigerator car;
(3) Ventilator car;
(4) Stock car;
(5) Gondola car;
(6) Hopper car;
(7) Flat car;
(8) Special car;
(9) Caboose car;
(10) Tank car; and
(11) Yard car.

(d) "Dedicated Service" means the exclusive assignment of cars to the transportation of freight between specified points under the following conditions:

(1) The cars are operated—

(i) Primarily on track that is inside an industrial or other non-railroad installation; and

(ii) Only occasionally over track of a railroad;

(2) The cars are not operated—

(i) At speeds of more than 15 miles per hour; and

(ii) Over track of a railroad—

(A) For more than 30 miles in one direction; or

(B) On a round trip of more than 60 miles;

(3) The cars are not freely interchanged among railroads;

(4) The words "Dedicated Service" are stenciled, or otherwise displayed, in clearly legible letters on each side of the car body;

(5) The cars have been examined and found safe to operate in dedicated service; and

(6) The railroad must—

(i) Notify the FRA in writing that the cars are to be operated in dedicated service;

(ii) Identify in that notice—

(A) The railroads affected;

(B) The number and type of cars involved;

(C) The commodities being carried; and

(D) The territorial and speed limits within which the cars will be operated; and

(iii) File the notice required by this paragraph not less than 30 days before the cars operate in dedicated service;

(e) "In service" when used in connection with a railroad freight car, means each railroad freight car subject to this part unless the car—

(1) Has a "bad order" or "home shop for repairs" tag or card containing the prescribed information attached to each side of the car and is being handled in accordance with § 215.9 of this part;

(2) Is in a repair shop or on a repair track; or

(3) Is on a storage track and is empty.

(f) "Railroad" means common carrier by railroad.

(g) "State inspector" means an inspector who is participating in investigative and surveillance activities under section 206 of the Federal Railroad Safety Act of 1970 (45 U.S.C. 435).

§ 215.7 Prohibited acts.

A railroad is subject to a penalty, as provided in Appendix C of this part, if it fails to comply with any provision of this part.

§ 215.9 Movement of defective cars for repair.

(a) A railroad freight car which has any component described as defective in this part may be moved to another location for repair only after the railroad has complied with the following:

(1) A person designated under § 215.11 shall determine—

(i) That it is safe to move the car; and

(ii) The maximum speed and other restrictions necessary for safely conducting the movement;

(2)(i) The person in charge of the train in which the car is to be moved shall be notified in writing and inform all other crew members of the presence of the defective car and the maximum speed and other restrictions determined under paragraph (a)(1)(ii) of this section.

(ii) A copy of the tag or card described in paragraph (a)(3) of this section may be used to provide the notification required by paragraph (a)(2)(i) of this section.

(3) A tag or card bearing the words "bad order" or "home shop for repairs" and containing the following information, shall be securely attached to each side of the car—

(i) The reporting mark and car number;

(ii) The name of the inspecting railroad;

(iii) The inspection location and date;

(iv) The nature of each defect;

(v) Movement restrictions;

(vi) The destination for shopping or repair; and

(vii) The signature of a person designated under § 215.11.

(b)(i) The tag or card required by paragraph (a)(3) of this section may only be removed from the car by a person designated under § 215.11 of this part.

(ii) A record or copy of each tag or card attached to or removed from a car shall be retained for 90 days and, upon request, shall be made available within 15 calendar days for inspection by FRA or State inspectors.

(iii) Each tag or card removed from a car shall contain a notification stating the date, location, reason for its removal, and the signature of the person who removed it from the car. These recordkeeping requirements have been approved by the Office of Management and Budget in accordance with the Federal Reports Act of 1942.

(c) Movement of a freight car under paragraph (a) of this section may be made only for the purpose of effecting

repairs. If the car is empty, it may not be placed for loading. If the car is loaded, it may not be placed for unloading unless unloading is consistent with determinations made and restrictions imposed under paragraph (a)(1) of this section and—

(1) The car is consigned for a destination on the line of haul between the point where the car was found defective and the point where repairs are made; or

(2) Unloading is necessary for the safe repair of the car.

§ 215.11 Designation of qualified persons.

(a)(1) Each railroad that operates railroad freight cars to which this part applies shall designate persons qualified to inspect railroad freight cars for defects prescribed by this part.

(2) Each person designated under paragraph (a)(1) of this section shall have demonstrated to the railroad a knowledge and ability to inspect railroad freight cars for compliance with the requirements of this part.

(b) With respect to designations under paragraph (a) of this section, each railroad shall maintain written records of—

(1) Each designation in effect; and

(2) The basis for each designation.

§ 215.13 Predeparture inspection.

At each location where a freight car is placed in a train, the freight car shall be inspected for compliance with the requirements of this part by a qualified person designated under § 215.11 of this part before the train departs that location. This inspection may be made before or after the car is placed in the train.

§ 215.15 Periodic inspection.

(a) After June 30, 1980, a railroad may not place or continue in service a freight car that has not received an initial periodic inspection in accordance with 49 CFR § 215.25, as in effect on October 6, 1976 (41 FR 44044), unless—

(1) The car is a high utilization car built or reconditioned after December 31, 1977; or

(2) The car is a non-high utilization car built or reconditioned after December 31, 1971.

(b) A freight car that has received an initial periodic inspection under paragraph (a) of this section shall be stenciled to so indicate in accordance with 49 CFR § 215.11 and Appendix C of this part, as in effect on October 6, 1976 (41 FR 44044). This stenciling need not be retained on the car after June 30, 1981.

(c) As used in this section, "high utilization car" means a car—

(1) Specifically equipped to carry trucks, automobiles, containers, trailers, or removable trailer bodies for the transportation of freight; or

(2) Assigned to a train that operates in a continuous round trip cycle between the same two points.

Subpart B—Freight Car Components

§ 215.101 Scope.

This subpart contains safety requirements prohibiting a railroad from placing or continuing in service a freight car that has certain defective components.

Suspension System

§ 215.103 Defective wheel.

A railroad may not place or continue in service a car, if—

(a) A wheel flange on the car is worn to a thickness of ⅞ of an inch, or less, at a point ⅜ of an inch above the tread of the wheel;

(b) The height of a wheel flange on the car, from the tread to the top of the flange, is 1½ inches, or more;

(c) The thickness of a rim of a wheel on the car is $^{11}/_{16}$ of an inch, or less;

(d) A wheel rim, flange, plate, or hub area on the car has a crack or break;

(e) A wheel on the car has a chip or gouge in the flange that is 1½ inches in length and ½ inch in width, or more;

(f) A wheel on the car has—

(1) A slid flat or shelled spot that is more than 2½ inches in length; or

(2) Two adjoining flat or shelled spots each of which is more than two inches in length;

(g) A wheel on the car shows evidence of being loose such as oil seepage on the back hub or back plate;

(h) A wheel on the car shows signs of having been overheated as evidenced by a reddish brown discoloration on the front or back face of the rim, that extends more than four inches into the plate area measured from the bottom of the back face of the rim; or

(i) A wheel on the car has been welded unless the car is being moved for repair in accordance with § 215.9 of this part.

§ 215.105 Defective axle.

A railroad may not place or continue in service a car, if—

(a) An axle on the car has a crack or is broken;

(b) An axle on the car has a gouge in the surface that is—

(1) Between the wheel seats; and

(2) More than one-eighth inch in depth;

(c) An axle on the car, used in conjunction with a plain bearing, has an end collar that is broken or cracked;

(d) A journal on the car shows evidence of overheating, as evidenced by a pronounced blue black discoloration; or

(e) The surface of the plain bearing journal on the axle, or the fillet on the axle, has—

(1) A ridge;

(2) A depression;

(3) A circumferential score;

(4) Corrugation;

(5) A scratch;

(6) A continuous streak;

(7) Pitting;

(8) Rust; or

(9) Etching.

§ 215.107 Defective plain bearing box: General.

A railroad may not place or continue in service a car, if the car has—

(a) A plain bearing box that does not contain visible free oil;

(b) A plain bearing box lid that is missing, broken, or open except to receive servicing; or

(c) A plain bearing box containing foreign matter, such as dirt, sand, or coal dust, that can reasonably be expected to—

(1) Damage the bearing; or

(2) Have a detrimental effect on the lubrication of the journal and the bearings.

§ 215.109 Defective plain bearing box: Journal lubrication system.

A railroad may not place or continue in service a car, if the car has a plain bearing box with a lubricating pad that—

(a) Has a tear extending half the length or width of the pad, or more;

(b) Shows evidence of having been scorched, burned, or glazed;

(c) Contains decaying or deteriorated fabric that impairs proper lubrication of the pad;

(d) Has—

(1) An exposed center core (except by design); or

(2) Metal parts contacting the journal; or

(e) Is—

(1) Missing; or

(2) Not in contact with the journal.

§ 215.111 Defective plain bearing.

A railroad may not place or continue in service a car, if the car has a plain bearing—

(a) That is missing, cracked, or broken;

(b) On which the bearing liner—

(1) Is loose; or

(2) Has a broken out piece; or

(c) That shows signs of having been overheated, as evidenced by—

(1) Melted babbitt;

(2) Smoke from hot oil; or
(3) Journal surface damage.

§ 215.113 Defective plain bearing wedge.

A railroad may not place or continue in service a car, if a plain bearing wedge on that car is—
(a) Missing;
(b) Cracked;
(c) Broken; or
(d) Not located in its design position.

§ 215.115 Defective roller bearing.

(a) A railroad may not place or continue in service a car, if the car has—
(1) A roller bearing that shows signs of having been overheated as evidenced by—
(i) Discoloration; or
(ii) Other telltale signs of overheating such as damage to the seal or distortion of any bearing component;
(2) A roller bearing with a—
(i) Loose or missing cap screw; or
(ii) Broken, missing, or improperly applied cap screw lock; or
(3) A roller bearing with a seal that is loose or damaged, or permits leakage of lubricant in clearly formed droplets.
(b)(1) A railroad may not continue in service a car that has a roller bearing whose truck was involved in a derailment unless the bearing has been inspected and tested by—
(A) Visual examination to determine whether it shows any sign of damage; and
(B) Spinning freely its wheel set to determine whether the bearing makes any unusual noise.
(2) The roller bearing shall be disassembled from the axle and inspected internally if—
(A) It shows any external sign of damage;
(B) It makes any unusual noise when its wheel set is spun freely;
(C) Its truck was involved in a derailment at a speed of more than 10 miles per hour; or
(D) Its truck was dragged on the ground for more than 200 feet.
(3) Each defective roller bearing shall be repaired or replaced before the car is placed back in service.

§ 215.117 Defective roller bearing adapter.

A railroad may not place or continue in service a car, if the car has a roller bearing adapter that is—
(a) Cracked or broken;
(b) Not in its design position; or
(c) Worn on the crown of the adapter to the extent that the frame bears on the relief portion of the adapter, as shown in the figure below (see figure 1).

§ 215.119 Defective freight car truck.

A railroad may not place or continue in service a car, if the car has—
(a) A side frame or bolster that—
(1) Is broken; or
(2) Has a crack of ¼ of an inch or more in the transverse direction on a tension member;
(b) A truck equipped with a snubbing device that is ineffective, as evidenced by—
(1) A snubbing friction element that is worn beyond a wear indicator;
(2) A snubber wear plate that is loose, missing (except by design), or worn through;
(3) A broken or missing snubber activating spring; or

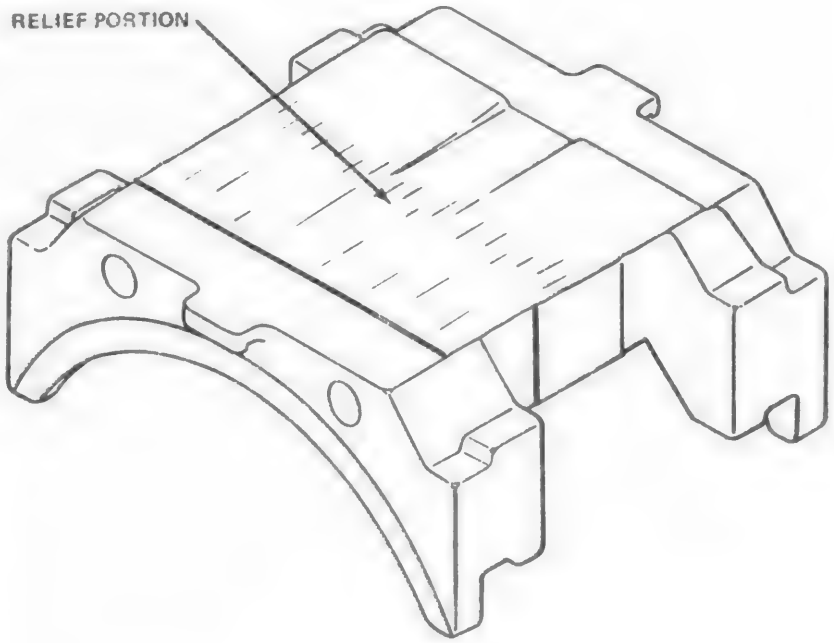

FIGURE 1

(4) Snubber unit that is broken, or in the case of hydraulic units, is broken or leaking clearly formed droplets of oil or other fluid.
(c) A side bearing in any of the following conditions:
(1) Part of the side bearing assembly is missing or broken;
(2) The bearings at one end of the car, on both sides, are in contact with the body bolster (except by design);
(3) The bearings at one end of the car have a total clearance from the body bolster of more than ¾ of an inch; or
(4) At diagonally opposite sides of the car, the bearings have a total clearance from the body bolsters of more than ¾ of an inch;
(d) Truck springs—
(1) That do not maintain travel or load;
(2) That are compressed solid; or
(3) More than one outer spring of which is broken, or missing, in any spring cluster;
(e) Interference between the truck bolster and the center plate that prevents proper truck rotations; or

(f) Brake beam shelf support worn so excessively that it does not support the brake beam.

Car Bodies

§ 215.121 Defective car body.

A railroad may not place or continue in service a car, if—

(a) Any portion of the car body, truck, or their appurtenances (except wheels) has less than a 2½ inch clearance from the top of rail;

(b) The car center sill is—

(1) Broken;

(2) Cracked more than 6 inches; or

(3) Permanently bent or buckled more than 2½ inches in any six foot length;

(c) The car has a coupler carrier that is—

(1) Broken;

(2) Missing;

(3) Non-resilient and the coupler has a type F head.

(d) After (six months after the effective date of this final rule), the car is a box car and its side doors are not equipped with operative safety hangers, or the equivalent, to prevent the doors from becoming disengaged;

(e) The car has a center plate—

(1) That is not properly secured;

(2) Any portion of which is missing; or

(3) That is broken; or

(4) That has two or more cracks through its cross section (thickness) at the edge of the plate that extend to the portion of the plate that is obstructed from view while the truck is in place; or

(f) The car has a broken sidesill, crossbearer, or body bolster.

Draft System

§ 215.123 Defective couplers.

A railroad may not place or continue in service a car, if—

(a) The car is equipped with a coupler shank that is bent out of alignment to the extent that the coupler will not couple automatically with the adjacent car;

(b) The car has a coupler that has a crack in the highly stressed junction area of the shank and head as shown in the figure below (see figure 2).

(c) The car has a coupler knuckle that is broken or cracked on the inside pulling face of the knuckle.

(d) The car has a knuckle pin or knuckle thrower that is—

(1) Missing; or

(2) Inoperative; or

(e) The car has a coupler retainer pin lock that is—

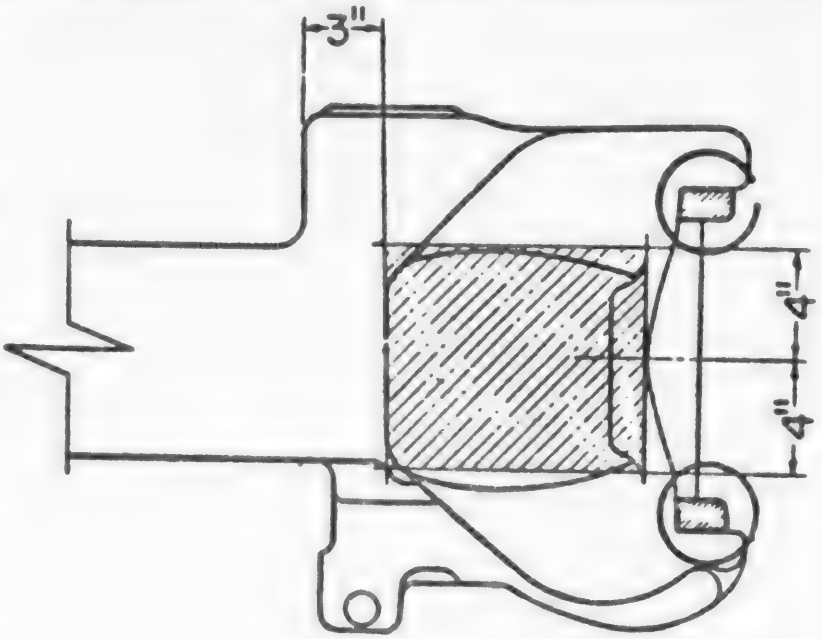

Figure 2

(1) Missing; or

(2) Broken; or

(f) The car has a coupler with any of the following conditions:

(1) The locklift is inoperative;

(2) The coupler assembly does not have anticreep protection to prevent unintentional unlocking of the coupler lock; or

(3) The coupler lock is—

(i) Missing;

(ii) Inoperative;

(iii) Bent;

(iv) Cracked; or

(v) Broken.

§ 215.125 Defective uncoupling device.

A railroad may not place or continue in service a car, if the car has an uncoupling device without sufficient vertical and lateral clearance to prevent—

(a) Fouling on curves; or

(b) Unintentional uncouplings.

§ 215.127 Defective draft arrangement.

A railroad may not place or continue in service a car, if—

(a) The car has a draft gear that is inoperative;

(b) The car has a broken yoke;

(c) An end of car cushioning unit is—

(1) Leaking clearly formed droplets; or

(2) Inoperative;

(d) A vertical coupler pin retainer plate—

(1) Is missing (except by design); or

(2) Has a missing fastener;

(e) The car has a draft key, or draft key retainer, that is—
(1) Inoperative; or
(2) Missing; or
(f) The car has a missing or broken follower plate.

§ 215.129 Defective cushioning device.

A railroad may not place or continue in service a car if it has a cushioning device that is—
(a) Broken;
(b) Inoperative; or
(c) Missing a part—
unless its sliding components have been effectively immobilized.

Subpart C—Restricted Equipment

§ 215.201 Scope.

This subpart contains requirements restricting the use of certain railroad freight cars.

215.203 Restricted cars.

(a) This section restricts the operation of any railroad freight car that is—
(1) More than 50 years old, measured from the date of original construction;
(2) Equipped with any design or type component listed in Appendix A to this part; or
(3) Equipped with a Duryea underframe constructed before April 1, 1950, except for a caboose which is operated as the last car in a train.
(b) A railroad may not place or continue in service a railroad freight car described in paragraph (a) of this section, except under conditions approved by the Federal Railroad Administrator.
(c) A railroad may petition the Administrator to continue in service a car described in paragraph (a) of this section. Each petition shall be
(1) Be submitted not less than 90 days before the car is to be operated;
(2) Be submitted in triplicate; and
(3) State or describe the following:
(i) The name and principal business address of the petitioning railroad.
(ii) The name and address of the entity that controls the operation and maintenance of the car involved.
(iii) The number, type, capacity, reporting marks, and car numbers of the cars, their condition, status, and age measured from the date of original construction.
(iv) The design, type component, or other item that causes the car to be restricted.
(v) The maximum load the cars would carry.
(vi) The maximum speed at which the cars would be operated.
(vii) That each car has been examined and found to be safe to operate under the conditions set forth in the petition.
(viii) The territorial limits within which the cars are to be operated and the name of each railroad that will receive the cars in interchange.

Subpart D—Stenciling

§ 215.301 General.

The railroad or private car owner reporting mark, the car number, and built date shall be stenciled, or otherwise displayed, in clearly legible letters and numbers not less than seven inches high, except those of the built date which shall not be less than one inch high—
(a) On each side of each railroad freight car body; and
(b) In the case of a tank car, in any location that is visible to a person walking at track level beside the car.

§ 215.303 Stenciling of restricted cars.

(a) Each restricted railroad freight car that is described in § 215.205(a) of this part shall be stenciled, or marked—
(1) In clearly legible letters; and
(2) In accordance with paragraphs (b) and (c) of this section.
(b) The letter "R" shall be—
(1) Placed immediately below or to the right of the car number;
(2) The same color as the reporting mark; and
(3) The same size as the reporting mark.
(c) The following terms, to the extent needed to completely indicate the basis for the restricted operation of the car, shall be placed on the car following the symbol "R" in letters not less than one inch high:
(1) Age.
(2) Coupler.
(3) Draft.
(4) Bearings.
(5) Truck.
(6) Underframe.
(7) Wheels.
(8) Yoke.

§ 215.305 Stenciling of maintenance-of-way equipment.

(a) Maintenance-of-way equipment (including self-propelled maintenance-of-way equipment) described in § 215.3(c)(3) shall be stenciled, or marked—
(1) In clearly legible letters; and
(2) In accordance with paragraph (b) of this section.
(b) The letters "MW" must be—
(1) Placed adjacent to the car number on each side of the car; and
(2) The same size as the reporting mark.

Appendix A—Railroad Freight Car Components

List of components whose use is restricted by § 215.203 of this part.

A. Air brakes:
The "K" type.

B. Axles:
1. Former AAR alternate standard tubular type.
2. Axle with letters "RJ" stamped on the end of the journal.

C. Couplers:
1. AAR type "D", top or bottom operated.
2. AAR type "E" with 5" by 7" shank.

D. Draft arrangement:
1. Miner FR–16 and FR–19–F draft gears.
2. Farlow draft attachment.

E. Plain journal bearings:
Cartridge type.

F. Roller bearings:
1. Nippon Sieko Kabushiki Kaish (NSK) size 6½" by 12" (marked "AAR 11").
2. Hyatt cylindrical bearing, all sizes (marked "AAR 2").
3. SKF "Piggybacker" spherical roller, size 6" by 11" (marked "AAR 7").

G. Trucks:
1. Arch bar type.
2. Truck with cast steel pedestal side frame, short wheel base, and no bolster.

H. Truck bolsters:
1. A bolster with one of the following pattern numbers listed according to manufacturer:

A.S.F.	Dresser (Symington)	Birdsboro	Lenoir car works
21183-B	BO 5234	1458 1468	CS–184
21183-N	BO 5263 BO 7076	1471	CS–611
21648-C	BO 7076-A		
22056-E	BO 7115		

2. Bolster cast before 1927.
3. Bolster without an identification mark or pattern number.

I. 1. Truck side frames:
A side frame with one of the following pattern numbers listed according to manufacturer:

A.S.F.	National castings	Buckeye	Dominion
7273	33793–1B	3–1776	TF–5100
7323		F–420	
21362 (cast prior to June 1941).			

Pittsburgh steel foundry	Scullin steel	Batten-dorf	Canadian steel foundry
31673	42–CS–180	UT 456	26565
4–1862			
3–1674	4695		
4–2045	4770		
12897	4942		
12921	5220		
21263	5364		
	5364–C		
	5364–E		
	5811–A		
	5889–B		
	6577–A		

2. Side frame cast before 1927.
3. Side frame without an identification mark or pattern number.
4. Side frame with an "I", "T", or "L" section compression or tension member.

J. Wheels:
1. Cast iron wheel.
2. Cast steel wheel marked "AAR X–2."

3. Southern cast steel wheel manufactured before May 7, 1958.

4. Griffin, three-riser cast steel wheel, ball rim design, 70-ton capacity.

5. Griffin, three-riser cast steel wheel, two-wear, 70- and 50-ton capacity, 33 inch, (marked X–5 or CS–2).

6. Wrought steel wheel manufactured before 1927, as indicated by marking on wheel.

7. Cast steel wheel marked AAR X–4.

8. Davis cast steel wheel.

9. One-wear, 70-ton Southern (ABEX) U1 cast steel wheels dated May 7, 1958 through December 31, 1969.

A. Wheels dated May 7, 1958, to January 1, 1964, are marked with the symbol "70T" cast on the back of the wheel plate; they are not marked "U–1."

B. Wheels dated January 1, 1964 through December 31, 1969, are marked with the symbols "CJ–33" and "U–1" *or* "70T" and "U–1" cast on the back of the wheel plate.

K. Yokes:

1. Riveted type.
2. Keyless type.
3. Vertical key type.

Appendix B—Schedule of Civil Penalties[1]

	Violation	Intentional violation[2]
Subpart A—General		
§ 215.9 Movement for repair		
(a), (c)	$ (3)	$ (3)
(b)	1,000	1,000
§ 215.11 Designation of qualified persons	500	1,000
§ 215.13 Pre-departure inspection	500	1,000
§ 215.15 Periodic inspection	1,000	1,000
Subpart B—Freight Car Components		
§215.103 Defective wheel		
(a) Flange thickness of:		
(i) ⅞" or less but more than 1 3/16"	1,500	2,000
(ii) 1 3/16" or less	2,000	2,500
(b) Flange height of:		
(i) 1½" or greater but less than 1⅝"	1,500	2,000
(ii) 1⅝" or more	2,000	2,500
(c) Rim thickness of:		
(i) 1 1/16" or less but more than ⅜"	1,500	2,000
(ii) ⅜" or less	2,000	2,500
(d)—		
(i) Crack of less than 1"	1,250	1,750
(ii) Crack of 1" or more	2,000	2,500
(iii) Break	2,500	2,500
(e) Chip or gouge in flange of:		
(i) 1½" or more but less than 1⅝" in length; and ½" or more but less than ⅝" in width	1,000	1,500
(ii) 1⅝" or more in length; or ⅝" or more in width	1,500	2,000
(f) Skid flat or shelled spot(s):		
(1) (i) One spot more than 2½", but less than 3", in length	750	1,000
(ii) One spot 3" or more in length	1,500	2,000
(2) (i) Two adjoining spots each of which is more than 2", but less than 2½", in length	1,000	1,500
(ii) Two adjoining spots both of which are at least 2" in length, if either spot is 2½", or more in length	1,500	2,000
(g)	1,000	1,500
(h) Overheated; discoloration extending:		
(i) More than 4" but less than 4½"	750	1,250
(ii) 4½" or more	1,250	1,750
(i)	1,000	1,500

Appendix B—Schedule of Civil Penalties[1]—Cont'd

	Violation	Intentional violation[2]
§ 215.105 Defective axle		
(a)—		
(i) Crack of 1" or less	1,000	1,500
(ii) Crack of more than 1"	1,500	2,000
(iii) Break or visible separation of metal at any crack	2,000	2,500
(b)	750	1,250
(c), (d)	1,000	1,500
(e)	500	1,000
§ 215.107 Defective plain bearing box: general		
(a)—		
(i) No visible free oil	750	1,250
(ii) Lubricating pad dry (no expression of oil observed when pad is compressed)	2,000	2,500
(b), (c)	1,000	1,500
§ 215.109 Defective plain bearing box: journal lubrication system		
(a), (b), (c)	500	1,000
(d)	500	1,000
(e)	2,000	2,500
§ 215.111 Defective plain bearing		
(a)	1,000	1,500
(b)	750	1,500
(c)	1,000	1,500
§ 215.113 Defective plain bearing wedge		
(a)	1,000	1,500
(b), (c)	500	1,000
(d)	1,000	1,500
§ 215.115 Defective roller bearing		
(a)—(1)	1,750	2,500
(2) (i) Cap screws loose or missing:		
one cap screw	1,000	1,500
two or three cap screws	1,500	2,000
(ii) Cap screw lock broken, missing or improperly applied	500	1,000
(3)	1,000	1,500
(b)—(1)	750	1,000
(2)	1,000	1,500
(3)	2,000	2,500
§ 215.117 Defective roller bearing adapter		
(a)	1,000	1,500
(b)	1,500	2,000
(c)	1,000	1,500
§ 215.119 Defective freight car truck		
(a)—(1)	2,000	2,500
(2) Side frame or bolster with crack of:		
(i) ¼" or more, but less than 1"	1,000	1,500
(ii) 1" or more	1,500	2,000
(b)	1,000	1,500
(c) Side bearing(s):		
(1), (2)	2,000	2,500
(3), (4) Total clearance at one end or at diagonally opposite sides of:		
(i) More than ¾" but not more than 1"	750	1,250
(ii) More than 1"	1,500	2,000
(d)—(1)	1,000	1,500
(2)	1,500	2,000
(3) Outer truck springs broken or missing:		
(i) Two outer springs	1,500	2,000
(ii) Three or more outer springs	2,500	2,500
(e)	2,000	2,500
(f)	1,000	1,500
§215.121 Defective car body		
(a)	1,000	1,500
(b)—(1)	1,500	2,000
(2), (3)	1,000	1,500
(c), (d)	1,000	1,500
(e)—(1)	2,000	2,500
(2)	1,250	1,500
(3)	1,000	1,500
(f)	1,000	1,500
§ 215.123 Defective couplers		
(a)	500	1,000
(b)	1,000	1,500
(c)	1,000	1,500
(d)	1,000	1,500
(e)	750	1,000
(f)	1,500	2,000

Appendix B—Schedule of Civil Penalties—Cont'd

	Violation	Intentional violation[2]
§ 215.125 Defective uncoupling device	1,000	1,500
§ 215.127 Defective draft arrangement		
(a), (b)	1,000	1,500
(c)	1,000	2,000
(d)	1,250	1,750
(e), (f)	1,000	1,500
215.129 Defective cushioning device	1,000	1,500
Subpart C—Restricted Equipment		
§ 215.203 Restricted cars	1,500	2,500
Subpart D—Stenciling		
§ 215.301 General	500	1,000
§215.303 Stenciling of restricted cars	500	1,000
§215.305 Stenciling of maintenance-of-way equipment.	(4)	(4)

Note on multiple violations: When two or more violations of these regulations are discovered with respect to a single freight car that is placed or continued in service by a railroad, the appropriate penalties set forth above are aggregated up to a maximum of $2,500 per day. For example, a railroad that continued a car in service with a missing side bearing assembly ($2,000) and no visible free oil in a plain journal box ($750) would be liable to a penalty of $2,500.

[1] Section 209 of the Federal Railroad Safety Act of 1970 (45 U.S.C. 438) requires the Secretary of Transportation to "include in, or make applicable to, any railroad safety rule, regulation, order, or standard issued under this title a civil penalty for violation thereof . . . in such amount, not less than $250 nor more than $2,500, as he deems reasonable." Each day of violation constitutes a separate offense.

[2] For purposes of this schedule, an intentional violation is the knowing and willful failure of a railroad to comply with the provisions of this part. The knowledge required for an intentional violation is knowledge of the facts constituting the violation. Knowledge of the regulations is presumed by law. Evidence that a violation has been committed or has been allowed to continue after an FRA or State inspector has provided the railroad notification of a deviation from the requirement of this part is *prima facie* evidence that the violation was knowing and willful. Evidence that a repair has been made to a freight car component but that component was not brought into full compliance with the standards is *prima facie* evidence that the violation was knowing and willful.

[3] Failure to observe any condition for movement set forth in paragraphs (a) and (c) of § 215.9 will deprive the railroad of the exception and make the railroad liable for penalty under Sections 215.103 through 215.129.

[4] Maintenance-of-way equipment not stenciled in accordance with § 215.305 is subject to all requirements of this part. *See* § 215.3(c)(3).

Appendix C—FRA Freight Car Standards Defect Code

The following defect code has been established for use by FRA and State inspectors to report defects observed during inspection of freight cars. The purpose of the code is to establish a uniform language among FRA, States, and the railroad industry that will facilitate communication, recordkeeping, and statistical analyses. The code may not be substituted for the description of defects on bad order tags affixed to cars being moved for repair under § 215.9. However, it may be used to supplement that description.

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General

215.009 Improper Movement of Defective Cars.
215.011 Designation of Qualified Persons.
215.013 Failure to Perform a Pre-departure Inspection.
215.015 Failure to Complete Initial Periodic Inspection as Required.

Freight Car Components

Suspension System

215.103 Defective Wheel.
215.105 Defective Axle.
215.107 Defective Plain Bearing Box: General.
215.109 Defective Plain Bearing Box: Journal Lubrication System.
215.111 Defective Plain Bearing.
215.113 Defective Plain Bearing Wedge.
215.115 Defective Roller Bearing.
215.117 Defective Roller Bearing Adapter.
215.119 Defective Freight Car Truck.

Car Bodies

215.121 Defective Car Body.

Draft System

215.123 Defective Couplers.
215.125 Defective Uncoupling Device.
215.127 Defective Draft Arrangement.
215.129 Defective Cushioning Device.

Restricted Equipment

215.203 Restricted Cars.

Stenciling

215.301 Improper Stenciling.
215.303 Improper Stenciling of Restricted Cars.
215.305 Improper Stenciling of Maintenance-of-Way Equipment.

Description of Defects

215.009 Failure to meet conditions for movement of defective cars for repairs.
215.011 Designation of Qualified Persons.
(A)(1) Railroad fails to designate persons qualified to inspect freight cars;
(2) Persons designated does not have knowledge and ability to inspect freight cars for compliance with the requirements of this part.
(B) Railroad fails to maintain written record of:
(1) Each designation in effect;
(2) The basis for this designation.
215.013 Failure to perform pre-departure inspection.
215.015 Periodic Inspection.
(A) Railroad fails to perform the periodic inspection as required by June 30, 1980 on:
(1) High utilization car built prior to December 31, 1977;
(2) Non-high utilization car built prior to December 31, 1971;
(B) A freight car improperly stenciled for periodic inspection.
215.103 Defective Wheel.
(A)(1) Flanges ⅞" or less at ⅜" above the tread;
(2) Flanges $^{13}/_{16}$" or less at ⅜" above the tread;
(3) Flanges ¾" or less at ⅜" above the tread;
(B)(1) Flange is 1½" or more from the tread to top of flange;
(2) Flange is 1⅝" or more from the tread to top of flange;
(3) Flange is 1¾".
(C)(1) Rim thickness is $1^{1}/_{16}$" or less;
(2) Rim thickness is ⅝" or less;
(3) Rim thickness is $^{9}/_{16}$" or less;
(D) Wheel cracked or broken in: (1) rim, (2) flange, (3) plate or (4) hub area.
(E) Wheel chip or gouge in flange:
(1) 1½" length and ½" in width or more;
(2) 1⅝" length and ⅝" in width or more;
(3) 1¾" in length and ¾" in width or more.
(F) Wheel has slid flat spot or shelled spot:
(1) 2½" in length or more;
(2) Has two adjoining flat spots each of which is 2" in length or greater;
(3) A single flat spot 3" in length or more;
(4) Has two adjoining flat spots one of which is at least 2" in length and the other is 2½" or greater.
(G) has a loose wheel.
(H) Overheated with discoloration extending: (1) More than 4"; (2) 4½" or more.
(I) A welded wheel on car that is not moving for repairs.
215.105 Defective Axle.
(A) Cracked or broken:
(1) Cracked 1' or less;
(2) Cracked greater than 1";
(3) Broken or cracked with visible separation of metal.
(B) Gauge between wheel seats more than ⅛" in depth:
(C) Broken or cracked end collar on plain bearing axle.
(D) Overheated journal.
(E) Surface of plain bearing journal or fillet has (1) ridge, (2) depression, (3) circumferential score, (4) corrugation, (5) scratch, (6) continuous streak, (7) pitting, (8) rust, (9) etching.
215.107 Defective plain bearing box.
(A) (1) Does not contain visible free oil;
(2) A journal box with dry pad.
(B) Lid is missing, broken or open except to receive service.
(C) Box has foreign matter that will damage bearing or prevent lubrication.
215.109 Defective plain bearing box: journal lubrication system.
(A) Pad torn half the length or width.
(B) Scorched, burned or glazed.
(C) Contains decaying or deteriorated fabric.
(D) Has exposed core except by design of metal parts in contact with journal.
(E)(1) Missing;
(2) Not in contact with journal.
215.111 Defective plain bearing.
(A) Missing, cracked or broken.
(B)(1) Bearing lining is loose;
(2) Broken out piece.
(C) Overheated as evidenced by:
(1) Melted babbit;
(2) Smoke from hot oil;
(3) Journal surface damaged.
215.113 Defective plain bearing wedge.
(A) Missing.
(B) Cracked.
(C) Broken.
(D) Not located in design position.
215.115 Defective roller bearing.
(A)(1) Overheated;
(2) Loose or missing cap screw;
(3) Roller bearing seal loose or damaged permitting loss of lubricant;
(4) Two or more missing cap screws.
(B)(1) Failure to inspect if involved in derailment;
(2) Failure to disassemble if required under this part;
(3) Failure to repair or replace defective roller bearings.
215.117 Defective roller bearing adapter.
(A) Cracked or broken.
(B) Not in design position.
(C) Worn excessively as shown on Figure 1 in relief portion.
215.119 Defective freight car trucks.
(A)(1) Side frame or bolster broken;
(2) Cracked ¼" or more in transverse direction on tension member;
(3) Cracked 1" or more in transverse direction on tension member.
(B) Has ineffective snubbing devices.
(C)(1) Missing or broken side bearing;
(2) Side bearing in contact except by design;
(3) Excessive side bearing clearance at one end of car;
(4) Excessive side bearing clearance on opposite sides at diagonal ends of car.
(D)(1) Has truck springs that will not maintain travel or load;
(2) Truck springs that are compressed solid;
(3) Has two springs broken in a cluster;
(4) Has three or more springs broken.
(E) Truck bolster and center plate interference preventing rotation.
(F) Has broken beam shelf supports worn so that shelf will not support beam.
215.121 Defective car body.
(A) Improper clearance—less than 2½" from top of rail.
(B) Center sill is:
(1) Broken;
(2) Cracked more than 6";
(3) Bent or buckled more than 2½" in any 6-foot length.
(C) Coupler carrier is:
(1) Broken;
(2) Missing;
(3) Non-resilient when used with coupler with F head.
(D) Car door not equipped with operative safety hangers.
(E) If center plate:
(1) Any portion missing;
(2) Broken or cracked as defined in this part.
(F) Broken side sills, crossbars or body bolster.
215.123 Defective couplers.
(A) Coupler shank bent.
(B) Coupler cracked in highly stressed area of head and shank.
(C) Coupler knuckle broken.
(D) Coupler knuckle pin or knuckle throw:
(1) Missing;
(2) Inoperative.
(E) Coupler retainer pin lock:
(1) Missing;
(2) Broken.
(F)(1) Coupler locklift is inoperative;
(2) No anti-creep protection;
(3) Coupler lock is (i) missing, (ii) inoperative, (iii) bent, (iv) cracked or (v) broken.
215.125 Defective uncoupling device.
(A) Fouling on curve.
(B) Unintentional uncoupling.
215.127 Defective draft arrangement.
(A) Draft gear inoperative.
(B) Broken yoke.
(C) End of car cushioning unit:
(1) Leaking;
(2) Inoperative.
(D) Vertical coupler pin retainer plate:
(1) Missing;

(2) Has missing fastener.
(E) Draft key or key retainer:
(1) Inoperative;
(2) Missing.
(F) Follower plate missing or broken.
215.129 Defective cushioning device unless effectively immobilized.
(A) Broken.
(B) Inoperative.
(C) Missing parts.
215.203 Operating a restricted car, except under conditions approved by FRA.

Stenciling

215.301 Failure to stencil car number and built date on freight car as required.
215.303 Failure to stencil restricted car as required.
215.305 Failure to stencil maintenance-of-way equipment as required.

Issued in Washington, D.C. on December 21, 1979.

John M. Sullivan,
Administrator.

[FR Doc. 79-39538 Filed 12-21-79; 11:25 am]
BILLING CODE 4910-06-M

[Docket No. RSGM-1, Notice No. 3]

49 CFR Part 223

Safety Glazing Standards—Locomotives, Passenger Cars and Cabooses

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT).

ACTION: Adoption of final rule.

SUMMARY: New Part 223 establishes minimum safety requirements for glazing materials in the windows of locomotives, passenger cars and cabooses. This Part requires that all newly built and most existing railroad equipment have improved safety glazing materials installed in order to reduce the risk of death or serious injury resulting from flying objects, including bullets.

DATES: This regulation is effective on January 31, 1980.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

On October 16, 1978, FRA published a notice of proposed rulemaking (NPRM) proposing to add a new Part 229 to establish minimum safety requirements for glazing materials that are to be installed on the windows of locomotives, passenger cars and cabooses (43 FR 47579). The purpose of the proposed regulation was to reduce the risk of death or serious injury for railroad crew members and railroad passengers from flying objects. This NPRM was also issued in response to a joint petition from the Association of American Railroads (AAR) and the Railway Labor Executive Association (RLEA).

Commenters Views

FRA solicited written comments and views on the proposed regulation and held a public hearing on November 29, 1978, to obtain oral comments on the proposal. Written comments were received from sixteen interested parties and oral presentations were made by eight parties at the public hearing. The commenters generally expressed support for the proposed rule but expressed some concern over specific provisions of the NPRM. However, two commenters did express doubt about the need for a regulation on glazing materials. One of these commenters noted the poor financial condition of the railroad industry and indicated that the magnitude of the safety problem was not sufficient to warrant a Federal rule that would necessitate large capital expenditures by the railroad industry. The other commenter expressed doubt that all railroads were experiencing a sufficiently high level of vandalism to warrant issuance of a Federal regulation and suggested that FRA should exclude from the coverage of the regulation railroads that do not have a safety problem in this area.

After reviewing the available data, FRA believes that a Federal regulation is needed to protect railroad crew members and railroad passengers. Although precise safety data is not available on this issue, the existing statistical information confirms the view of the AAR and the RLEA that a significant safety hazard exists and appears to be growing. For example, FRA data on accidents or incidents involving persons struck by thrown or otherwise propelled objects shows that some 246 people were injured in 1977 and that figure increased to 291 people in the year 1978. Additionally, data from the National Railroad Passenger Corporation (Amtrak) indicates that the FRA accident report statistics, which reflect only those instances in which a person is injured sufficiently to require at least first-aid treatment, understate the magnitude of the problem. For example, in calendar year 1978, Amtrak trains were subjected to in excess of one thousand stoning and nearly one hundred shooting incidents that did not result in accident reports being filed with the FRA. In view of these circumstances, FRA concludes that a significant safety hazard does exist which would be diminished by the installation of improved glazing materials. Accordingly, FRA is proceeding with the adoption of this regulation.

The concern expressed by the other commenter, that a railroad without a high incidence of vandalism should not be forced to comply with this regulation, can be resolved on a case by case basis through the issuance of a waiver of compliance. FRA is empowered to issue such waivers when the facts indicate that a waiver of compliance is consistent with the goal of improving rail safety and is in the public interest. FRA already has established waiver procedures in its Rules of Practice. (49 CFR Part 211.)

The remaining commenters expressed support for the proposed rule but voiced concern over specific provisions contained in the NPRM. These comments and resulting changes are discussed under the appropriate section heading in this preamble.

In adopting a final rule on glazing materials, FRA has decided to place these provisions in Part 223 rather than Part 229 as proposed in the NPRM. This decision reflects FRA's recently issued proposal to amend the Locomotive Inspection Rules and to place the amended provisions in Part 229. Additionally, FRA consolidated two proposed provisions (proposed Sections 229.7 and 229.9) into a single section which resulted in the renumbering of subsequent sections. Consequently, the following discussion is identified by reference to the final rule followed by the proposed section number in parenthesis.

Section 223.3 (Proposed Section 229.3). In the proposed regulation, FRA structured the provisions of Section 229.5(a) and Section 229.13 to permit some locomotives to continue in service without the prescribed retrofit, provided these units were not used as a lead or controlling locomotive. The language of these provisions was also drafted in such a way that a railroad could permit a vandal damaged unit to continue in service until the prescribed retrofit by assuring that such a unit was not the lead unit or the controlling unit occupied by the crew.

FRA believes that the concept contained in the proposed rule is valid but that the wording of the proposed rule could easily be misunderstood. Consequently, FRA decided to change the final rule to more clearly express

FRA's intent. This is being accomplished by providing a clear statement of how a railroad may exclude such locomotives from the applicability of this regulation. Additionally, FRA has added a provision that will require the identification of such units.

FRA has accomplished this change by revising the proposed regulation to include a new subsection (Section 223.3(b)(4)) to exclude from the applicability of this part units that are identified as a "designated locomotive". Additionally, FRA has added a definition of the concept of a designated unit which clearly details the steps that are needed to place a locomotive in this category.

Additionally, one commenter questioned whether the language contained in proposed Section 229.3(b)(3) was intended to exclude privately owned passenger cars. The commenter noted that approximately fifty passenger cars are owned by individuals, clubs and historical societies and that these cars range in age from 25 to 65 years. Given their vintage and limited use, the commenter urged that these cars should be considered historical or antiquated equipment and excluded from the glazing regulations but noted that the cars are not always operated in trains consisting exclusively of similar equipment.

It was not FRA's intent to include such cars within the scope of this regulation. FRA is revising the proposed language of this section to reflect that intent.

Section 223.5 (Proposed Section 229.5). In keeping with changes being made to § 223.3, FRA is altering the proposed language for this section. The first change involves the language contained in proposed § 229.5(a). In the final rule, § 223.5(a) contains a simple definition of what constitutes a "locomotive". The second change involves the addition of what constitutes a locomotive in "designated service" in § 233.5(m). Under this new definition, a locomotive that is operated under the specified operational limitations, may continue in service without installing the prescribed glazing materials. Since such units may not be occupied by operating or deadheading crews and must be stenciled to alert people to this fact, FRA believes that the necessary degree of employee safety will be achieved.

Several commenters also raised issues that relate to the definitions contained in proposed section 229.5. The first concerns the language used to define what constitutes a "yard locomotive." They noted that some locomotives, generally characterized as "switch locomotives", are used almost exclusively to perform switching functions within a yard. They suggested that the definition be drafted to permit such units to be considered as "yard locomotives" even though the units are occasionally used to perform industrial switching or transfer movements beyond the confines of a yard. This suggestion was echoed by another commenter who also asked that FRA define more precisely the concept of what constitutes a single yard for the purpose of this regulation.

FRA's intent was to permit locomotives that are operated exclusively within the confines of a yard to continue in service without a retrofit of the prescribed glazing materials. Available data indicates that the risk exposure for crew members from thrown objects or bullets is significantly lower when they are operating in a yard. Consequently, FRA proposed a narrow operational definition to identify and exclude these locomotive units. This definitional approach was chosen since it reflected the utilization of a locomotive rather than design characteristics of the unit. Utilization is the primary factor of concern to FRA in these circumstances. Broadening the scope of this provision, either by use of a design characteristic or by allowing these locomotives to occasionally operate beyond the yard, would expose crew members to greater risk of injury. Therefore, FRA has not accepted this suggestion. FRA is responding to the commenter's request for a better definition of what constitutes a single yard by revising this definition in order to reflect more fully FRA's intent and to resolve the perceived ambiguity problem that prompted this request. FRA believes that individual local practices of referring to portions of a given facility by a particular designation is the concern that prompted the request. This situation is illustrated most clearly in large hump yard facilities where distinct portions of the facility are given individual designations, such as the receiving yard, the classification yard, or some unique local name for easy reference purposes. FRA's intent is to treat a locomotive that stays within the confines of a particular yard facility as being a "yard locomotive" for the purposes of this regulation even though that unit may operate in various portions of a given facility. Consequently, FRA is revising the definition to include the phrase "single yard area." In providing this revised definition, FRA recognizes that only a few locomotives are utilized exclusively within a single yard area and that consequently the vast majority of locomotives used for yard service will require the installation of the prescribed glazing materials.

A number of commenters expressed concern over the absence of any provision concerning the manner in which glazing materials are to be installed. These commenters expressed a belief that the performance of the glazing materials could be affected by the manner of installation. FRA is aware of some limited data that supports the argument that this regulation should not be totally silent on the issue of how glazing materials are to be installed in the affected equipment. Since FRA's intent is to provide minimum safety standards in this area and because of the wide variances in equipment design, FRA is addressing this problem in a limited manner. Consequently, FRA is requiring that improved glazing materials be installed in such a manner that the occupants of any unit will not be injured in the event the glazing materials are impacted. This will assure that the total glazing installation will provide the same level of protection that glazing materials alone were intended to provide. This is being accomplished by revising the definition of what constitutes "certified glazing" in subsection (k).

The final comments regarding this section involved the concept of the "emergency opening window," defined in subsection (l), that is required to be installed in passenger cars. Some commenters suggested that FRA expand on its proposal and provide greater detail concerning the number of window exits, their location and method of identification. Other commenters inquired about the use of certain types of windows to meet this definition.

FRA's intent, in including a provision for emergency windows, was to assure that the use of improved glazing materials would not indirectly reduce passenger safety by making emergency egress more difficult in an accident or derailment situation. As FRA noted in the preamble to the NPRM, the known wide range of variables present in the existing fleet or passenger cars does not make it appropriate, in FRA's judgement, to provide additional, more specific requirements for these windows. The commenters, although urging greater FRA action, have provided neither data nor a conceptual framework that would permit FRA to adopt their suggestion. Consequently, FRA has not changed the proposed language.

The absence of any analogous emergency window provisions for locomotives and cabooses was also

noted by the commenters. FRA did not include such a provision in the proposed regulation because the limited number of people in these units and the number of available exits indicate that sufficient emergency egress capability is already provided. Accordingly, no additional Federal regulatory action is necessary. Moreover, many of the windows in these units are designed so that they slide open. This design feature permits easy egress in a crisis situation. FRA agrees, as urged by one commenter, that similarly designed windows in older passenger cars should be considered to be emergency opening windows.

Section 223.7 (Proposed §§ 229.7 and 229.9). FRA is providing a new caption for this section and is combining in this single section the provisions that were contained in proposed sections 229.7 and 229.9 concerning the liability for civil penalty for violation of this regulation and the procedure for obtaining a waiver of compliance with this regulation. This change is merely organizational in nature and reflects comparable sections in other FRA rules that are being revised.

Section 223.9 (Proposed § 229.11). Several commenters expressed concern over the proposed compliance date for newly built or rebuilt locomotives contained in proposed § 229.11. These commenters indicated that, if they decided to alter the existing methods for mounting glazing materials in locomotives, additional time would be necessary to accomplish this task and to produce the needed materials for use on the new units. This concern appears to have been intensified by the reservation that these commenters expressed about the stringency of the performance level for side glazing locations.

FRA believes that a six month lead time for compliance for newly built and rebuilt locomotives is appropriate and can be accomplished with reasonable effort. Additionally, FRA is revising the proposed performance level for materials used in side-facing glazing locations. This revision, which is discussed in greater detail below, should serve to make it easier to meet the proposed compliance date. Therefore, FRA has retained this proposal without change.

Section 223.11 (Proposed § 229.13). One commenter expressed concern over the wording contained in proposed § 229.13 that would require immediate retrofitting of a unit in the event that a locomotive window is broken or damaged. The commenter noted that this provision could cause severe compliance problems because of the need to remove equipment from service as soon as the damage occurred and urged that a period of ninety days be allowed for completion of this work. FRA agrees that the immediate action provision could produce unnecessary service disruptions and inconvenience to the public and is revising this provision to permit a railroad to continue the vandal damaged unit in service for a period not to exceed forty-eight hours. At the end of that period, the locomotive must either be removed from service until the required retrofit is accomplished or the unit must be placed in "designated service". The revised provision will allow a railroad to more effectively deal with the various operational problems that could be encountered under the terms of the proposed section and still provides for the requisite degree of crew safety.

Section 223.13 (Proposed § 229.15). A commenter expressed concern over the wording contained in proposed § 229.15 that would require immediate retrofitting of a caboose in the event that a window is broken or damaged. The commenter noted that compliance with this provision in situations such as branch line operations could cause unnecessary service disruptions. FRA agrees that the proposed language is unduly restrictive and is revising this provision to require that the work be accomplished within 30 days after the breakage occurs. FRA believes that this time frame is appropriate in light of the normal maintenance cycles for this equipment and the degree of hazard involved.

Section 223.15 (Proposed § 229.17). FRA did not receive any comments directly addressing the language contained in proposed § 229.17. FRA is adopting the proposed language without change.

Section 223.17 (Proposed § 229.21). The language of this section has basically remained unchanged from the wording that was contained in proposed § 229.21. The wording changed in adopting this final rule reflects the changed Part number and now includes passenger cars within its scope.

In adopting the final rule FRA is not including the restrictions on interim use contained in proposed § 229.21. All of the commenters who addressed the proposed interim use provision for equipped locomotives voiced opposition to this concept. Among the points raised by these commenters was the fact that compliance with this proposal could result in a reduction in operational safety in instances when circumstances require that a locomotive be equipped with cab signal devices, automatic train stop devices or snowplows. FRA agrees that the safety benefits derived in these instances outweigh those gained by adherence to the proposed language of this section. Consequently, FRA is deleting this provision from the final rule. FRA would urge railroads to adhere to the concept contained in the proposed rule unless there are other safety factors that would be compromised by such adherence.

Appendix A

FRA received a considerable volume of comments with regard to the language of this proposed provision which contains both the performance criteria and the testing methodology for the glazing materials. The initial point made by the commenters was the belief that FRA was being unduly restrictive by limiting the certification process to glazing manufacturers. The commenter offering this opinion believes that any party should be permitted to do the necessary testing and certification to achieve compliance.

FRA proposed that manufacturers do the requisite testing and certification because this group appears to be the most qualified and directly affected party. In structuring the regulation in this manner, FRA has not totally precluded other parties from providing certification based on appropriate testing. However, if a party other than a manufacturer desires to provide the required certification, a waiver of this requirement will be necessary. FRA believes that the individualized review process employed in waiver proceedings, is necessary to assure that the quality of the testing will be sufficient to insure the protection of railroad crew members and railroads passengers.

Another commenter raised a question about the requirement that a railroad obtain a written certification that the glazing material it is installing meets the requirements of this regulation. The commenter was concerned that the language could be interpreted to mean that a written certification must be obtained for each piece of material being installed.

FRA's intent is that a railroad install only those types of glazing materials which meet the requirements of this regulation. To assure that only the prescribed materials are being utilized, FRA believes that it is necessary for a railroad to determine that a particular product which has been selected does qualify for installation. However, it is not necessary that such a determination be made and documented for each piece of glazing material. A determination by the railroad that the given brand or product line distributed by a manufacturer has been tested and has qualified will be sufficient.

FRA agrees that the language of this section does not clearly describe the necessary steps that must be followed and is revising the language to more effectively state the procedures involved. In the revised language, a manufacturer who supplies glazing materials that are intended for use in a locomotive, passenger car or caboose can certify that a given type, brand or product line has been successfully tested in accordance with this appendix. This certification would be sufficient to allow a railroad to install such material in any quantity it desired. If a railroad elected to use different product types from one manufacturer or opted to use the product lines of several manufacturers, it would only be necessary to determine that each type, brand or product line selected was in fact certified by its manufacturer. FRA is not detailing the mechanism by which a railroad should or can assure itself that the manufacturer does certify its particular product. However, FRA is revising the identification markings to be imprinted on each individual unit of glazing material so that it will be possible to ascertain the type of material being installed.

The revised identification procedures are now detailed in subsection (c) of this appendix and require that each individual piece being installed contain a marking to indicate that the material qualifies as either Type I or Type II glazing and that the material was manufactured by a given producer. Additionally, FRA is requiring that the identification marking contain sufficient data so that the type, brand or product line of the manufacturer to which this unit of material belongs can be identified.

Several commenters raised questions about the method proposed by FRA for marking or identifying glazing materials that comply with this regulation. FRA's proposal for the use of a blue circle or blue square was deemed impractical because of the current practice of providing large sheets of material that are subsequently cut into smaller units prior to installation and because the color selected will fade rapidly and become indistinquishable. These commenters noted that many users of the same type of glazing materials which will meet FRA's concepts employ "hot stamping" or imprinting techniques to identify the materials and urged that FRA permit use of these techniques.

FRA's intent was to ensure that the glazing materials are readily identifiable. It now appears that the proposed language is unduly restrictive in accomplishing this goal. Consequently, FRA is deleting the reference to blue circles or blue squares. Additionally, FRA is rewording this provision to provide that material that qualifies as either Type I or Type II glazing must be permanently marked so that it is readily identifiable. However, the exact method of marking the material has not been specified. This will permit manufacturers and installers to convey the necessary information in whatever reasonable fashion is desired. In this way, the use of the "hot stamping" technique or other identification methods can be employed by the affected parties.

It should also be noted that FRA is revising this provision to clearly state that the identification marking must be done in such a manner that the required information is clearly visible once the material has been installed.

The next issue raised by the commenters addressed various aspects of the testing methodology proposed by FRA. Several commenters expressed the belief that FRA should require independent third party observation or verification of the actual test procedures for each product. Although no rationale was provided, FRA assumes that the commenters have some reservations about relying on the quality of manufacturer testing. This concern is also apparently the basis for the suggestion that periodic retesting should be required by FRA.

Adoption of the suggestions that independent third party verification and periodic retesting be required, would improve the quality control assurance levels. However, FRA does not believe that the facts warrant imposition of these additional requirements. FRA's intent is to provide minimum standards and to impose limited testing requirements to assure that materials meet those standards. FRA believes that the proposed requirements and the traditional economic forces of the marketplace will be sufficient to achieve the desired goal for improved safety and that adoption of these suggestions would constitute unnecessary overregulation in this instance.

The commenters urged many revisions in the testing procedures proposed by FRA and institution of additional testing parameters. Standardization of the size of the material and the mounting of the material; change in location for the witness plate; utilization of equivalency impacts; and expansion of the test regime to measure the effects of temperature, humidity, transmissivity and durability were suggested as areas for revision.

FRA believes that these suggested revisions are not appropriate and that additional testing requirements are not needed. FRA did not propose standardized test sizes or mountings because of the wide range of sizes and mountings that currently exist for the equipment that is already in service in the railroad industry. FRA believes that the latitude provided by the proposed regulation is necessary in light of these variables. Although product comparability data may suffer from the absence of the recommended standardization, FRA believes that such data is not essential from the standpoint of this regulation. For similar reasons FRA did not include the additional testing requirements suggested by the commenters. The suggested additions are not essential for evaluating the safety performance of these glazing materials, although they may be useful from the standpoint of the manufacturer or the purchaser of the materials. Accordingly, FRA does not agree that such tests should be required by Federal regulation. The remaining suggestion that FRA permit the use of equivalency impact testing as an alternative to the proposed bullet or cinder block impacts presents a slightly different issue. FRA selected these proposed tests because they are representative of the actual environment in which the materials will be utilized and because FRA perceived a difference of opinion in the technical community over the question of whether true equivalency can be obtained by substituting different test methodologies from those proposed. FRA is prepared to respond favorably to any party who can demonstrate that a substitute test program will provide a truly equivalent test to that being prescribed by FRA. Accordingly, FRA is retaining the proposed procedures.

The commenters addressed the provision relating to the "witness plate" that is used to detect material separation from the sheet of glazing that could impact a person adjacent to the installed window. FRA proposed that this witness plate be installed within six inches of the material being tested. The commenters suggested that FRA permit the witness plate to be located at a distance of up to eighteen inches from the test material. Additionally, one commenter suggested a change in the material specified for use as a witness plate. FRA believes that the six inch distance requirement is necessary since there are many instances in which people will be at this distance from the window when an impact occurs. Injuries, particularly injuries to eyes, are likely to occur if particles of material are dislodged on impact. Consequently, FRA believes that a six inch rather than an

eighteen inch distance between the witness plate and the test material is more appropriate. FRA is revising the technical description for the witness plate material as suggested, by providing for a more easily obtainable type of aluminum.

The final issue raised by the commenters with respect to the testing provisions involves the performance level proposed by FRA for glazing materials used in side facing glazing locations. All of the commenters urged that FRA consider reducing the force levels that were proposed for the cinder block portion of the test procedure. They expressed the belief that it was very unlikely that objects with the mass of a cinder block could strike a side window at the rate of velocity contemplated by FRA. The concern over this issue was intensified by the commenters' belief that compliance with the proposed cinder block test procedure would require that large numbers of frames and ancillary supporting mechanisms be modified and that this would have an adverse impact on the proposed retrofit schedule.

FRA agrees that the proposed cinder block impact speed criterion for side facing glazing location is too stringent. Review of available data suggests that the rate of velocity for the cinder block impact can be reduced without significantly reducing safety. Consequently, FRA is revising this portion of the side window impact testing to require that the material be subjected to an impact when the cinder block is moving at a minimum of 12 feet per second velocity. This impact velocity was selected on the basis of available data on the relative impact energy that glazing can be expected to experience from hand thrown objects. It should be noted, however, that FRA is not altering the proposed bullet impact provisions for testing materials intended for use in side window locations.

Economic Impact

FRA has determined that adoption of this final rule does not constitute a significant regulatory proposal. Therefore, a regulatory analysis under Executive Order 12044 is not required (E. O. 12044, 43 FR 12661, March 24, 1978).

However, FRA did prepare a Regulatory Evaluation of the proposed regulation and has revised that evaluation in light of the comments received and the changes made in the final rule. The resulting cost analysis and cost benefit analysis, prepared in accordance with the DOT's policies for evaluation of regulatory impacts (Regulatory Policies and Procedures, 44 FR 11034, February 26, 1979), have been placed in the public docket for this proceeding.

Environmental Impact

On March 16, 1979, the FRA published (44 FR 16062) revised procedures for insuring full consideration of the environmental impacts of FRA actions as required by the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*), other environmental statutes, executive orders, and DOT Order 5610.113. FRA reviewed the criteria established in those procedures and determined that adoption of this final rule does not constitute a major FRA action which requires an environmental assessment.

In consideration of the foregoing, Title 49 of the Code of Federal Regulations is amended by the addition of a new Part 223 set forth below:

PART 223—SAFETY GLAZING STANDARDS—LOCOMOTIVES, PASSENGER CARS AND CABOOSES

Subpart A—General

Sec.

223.1 Scope.
223.3 Application.
223.5 Definitions.
223.7 Responsibility.

Subpart B—Specific Requirements

223.9 Requirements for new or rebuilt equipment.
223.11 Requirements for existing locomotives.
223.13 Requirements for existing cabooses.
223.15 Requirements for existing passenger cars.
223.17 Identification of equipped locomotives, passenger cars and cabooses.
Appendix A—Certification of Glazing Materials.

Authority: Sec. 202, 84 Stat. 971 (45 U.S.C. 431); sec. 1.49(n) of Title 49 of the Code of Federal Regulations.

Subpart A—General

§ 223.1 Scope.

This part provides minimum requirements for glazing materials in order to protect railroad employees and railroad passengers from injury as a result of objects striking the windows of locomotives, caboose and passenger cars.

§ 223.3 Application.

(a) This part applies to railroads that operate rolling equipment on standard gauge track that is a part of the general railroad system of transportation.

(b) This part does not apply to—

(1) Locomotives, cabooses, and passenger cars that operate only on track inside an installation that is not part of the general railroad system of transportation;

(2) A rapid transit railroad that operates only on track used exclusively for short haul rapid transit passenger service in a metropolitan or suburban area; and

(3) Locomotives, passenger cars and cabooses that are historical or antiquated equipment and are used only for excursion, educational, recreational purposes or private transportation purposes.

(4) Locomotives that are used exclusively in designated service as defined in § 223.5(m).

§ 223.5 Definitions.

As used in this part—

(a) "Locomotive" means a self-propelled unit of equipment designed primarily for moving other equipment. It does not include self-propelled passenger cars.

(b) "Caboose" means a car in a freight train intended to provide transportation for crew members.

(c) "Passenger Car" means a unit of rolling equipment intended to provide transportation for members of the general public and includes self-propelled cars designed to carry baggage, mail, express and passengers.

(d) "Yard" is a system of auxiliary tracks used exclusively for the classification of passenger or freight cars according to commodity or destination; assembling of cars for train movement; storage of cars; or repair of equipment.

(e) "Yard Locomotive" means a locomotive that is operated only to perform switching functions within a single yard area.

(f) "Yard Caboose" means a caboose that is used exclusively in a single yard area.

(g) "Rebuilt Locomotive, Caboose or Passenger Car" means a locomotive, caboose or passenger car that has undergone overhaul which has been identified by the railroad as a capital expense under Interstate Commerce Commission accounting standards.

(h) "Windshield" means the combination of individual units of glazing material of the locomotive, passenger car, or caboose that are positioned in an end facing glazing location.

(i) "End Facing Glazing Location" means any location where a line perpendicular to the plane of the glazing material makes a horizontal angle of 50 degrees or less with the centerline of the locomotive, caboose or passenger car. Any location which, due to curvature of the glazing material, can meet the criteria for either a front facing location

or a side facing location shall be considered a front facing location.

(j) "Side Facing Glazing Location" means any location where a line perpendicular to the plane of the glazing material makes an angle of more than 50 degrees with the centerline of the locomotive, caboose or passenger car.

(k) "Certified Glazing" means a glazing material that has been certified by the manufacturer as having met the testing requirements set forth in Appendix A of this part and that has been installed in such a manner that it will perform its intended function.

(l) "Emergency Opening Window" means that segment of a side facing glazing location which has been designed to permit rapid and easy removal during a crisis situation.

(m) "Designated Service" means exclusive operation of a locomotive under the following conditions;

(1) The locomotive is not used as an independent unit or the controlling unit is a consist of locomotives except when moving for the purpose of servicing or repair within a single yard area;

(2) The locomotive is not occupied by operating or deadhead crews outside a single yard area; and

(3) The locomotive is stenciled "Designated Service—DO NOT OCCUPY".

§ 223.7 Responsibility.

(a) A railroad that fails to comply with any requirement of this part with respect to any locomotive, passenger car or caboose which it operates is subject to a civil penalty as provided in Appendix B of this part. Each day of violation constitutes a separate offense.

(b) A railroad may petition the Federal Railroad Administrator for exemption from any or all requirements prescribed in this part. Each petition shall be filed in accordance with Part 211 of this chapter.

Subpart B—Specific Requirements

§ 223.9 Requirement for new or rebuilt equipment.

(a) Locomotives, including yard locomotives, built or rebuilt after June 30, 1980, must be equipped with certified glazing in all windows.

(b) Cabooses, including yard cabooses, built or rebuilt after June 30, 1980, must be equipped with certified glazing in all windows.

(c) Passenger cars, including self-propelled passenger cars, built or rebuilt after June 30, 1980, must be equipped with certified glazing in all windows and at least four emergency opening windows.

§ 223.11 Requirement for existing locomotives.

(a) Locomotives, other than yard locomotives, built or rebuilt prior to July 1, 1980, which are equipped in the forward and rearward end facing glazing locations of the windshield with a glazing material that meets the criteria for either portion of the impact testing required for a Type I test under the provisions of Appendix A of this part, will not require the installation of certified glazing in the windshield location except to replace windshield glazing material that is broken or damaged.

(b) Locomotives, other than yard locomotives, built or rebuilt prior to July 1, 1980, which are equipped in all side facing glazing locations with a glazing material that meets the criteria for either portion of the impact testing required for a Type II test under the provisions of Appendix A of this part, will not require the installation of certified glazing in the sidefacing glazing location except to replace sidefacing glazing material that is broken or damaged.

(c) Except for yard locomotives and locomotives equipped as described in paragraphs (a) and (b), locomotives built or rebuilt prior to July 1, 1980, shall be equipped with certified glazing in all windows after June 30, 1983.

(d) Each locomotive subject to the provisions of paragraph (c) of this section, which, as a result of an act of vandalism has a window that is broken or damaged so that the window fails to permit good visibility,

(1) Shall be placed in Designated Service within 48 hours of the time of breakage or damage or

(2) Shall be removed from service until equipped with certified glazing in the following manner:

(i) If the broken or damaged window is a part of the windshield, all of the forward and rearward end facing glazing locations must be replaced with certified glazing.

(ii) If the broken or damaged window is a part of the sidefacing window, all of the sidefacing glazing locations must be replaced with certified glazing.

§ 223.13 Requirements for existing cabooses.

(a) Cabooses, other than yard cabooses, built or rebuilt prior to July 1, 1980, which are equipped in the forward and rearward end facing glazing locations of the windshield with a glazing material that meets the criteria for either portion of the impact testing required for a Type I test under the provisions of Appendix A of this part, will not require the installation of certified glazing in the windshield location except to replace windshield glazing material that is broken or damaged.

(b) Cabooses, other than yard cabooses, built or rebuilt prior to July 1, 1980, which are equipped in all side facing glazing locations with a glazing material that meets the criteria for either portion of the impact testing required for a Type II test under the provisions of Appendix A of this part, will not require the installation of certified glazing in the sidefacing glazing locations except to replace sidefacing glazing material that is broken or damaged.

(c) Except for yard cabooses and cabooses equipped as described in paragraphs (a) and (b), cabooses built or rebuilt prior to July 1, 1980, shall be equipped with certified glazing in all windows after June 30, 1983.

(d) Each caboose subject to the provision of paragraph (c) of this section, which, as a result of an act of vandalism, has a window that is broken or damaged so that the window fails to permit good visibility shall be equipped with certified glazing in the following manner:

(1) If the broken window is a part of the windshield, all of the forward and rearward end facing glazing locations must be replaced with certified glazing within 30 days of the date of breakage or damage.

(2) If the broken window is a part of the sidefacing window, all of the sidefacing glazing locations must be replaced with certified glazing within 30 days of the date of breakage.

§ 223.15 Requirements for existing passenger cars.

(a) Passenger cars built or rebuilt prior to July 1, 1980, which are equipped in the forward and rearward end facing glazing locations of the windshield with a glazing material that meets the criteria for either portion of the impact testing required for a Type I test under the provisions of Appendix A of this part will not require the installation of certified glazing in the windshield location except to replace windshield glazing material that is broken or damaged.

(b) Passenger cars built or rebuilt prior to July 1, 1980, which are equipped in the sidefacing glazing locations with a glazing material that meets the criteria for either portion of the impact testing required for a Type II test under the provisions of Appendix A of this part, will not require the installation of certified glazing except to replace sidefacing glazing material that is broken or damaged.

(c) Except for passenger cars described in paragraphs (a) and (b),

passenger cars built or rebuilt prior to July 1, 1980, shall be equipped with certified glazing in all windows and a minimum of four emergency windows after June 30, 1983.

(d) Each passenger car subject to the provisions of paragraph (c) of this section which as a result of an act of vandalism, has a window that is broken or damaged so that the window fails to permit good visibility shall be equipped with certified glazing in the following manner:

(1) When the broken window is a part of the windshield, all of the forward and rearward end facing glazing locations shall be replaced with certified glazing within 30 days of breakage.

(2) When the broken window is a part of the sidefacing window, the glazing in that individual sidefacing glazing location shall be replaced with certified glazing within 30 days of the date of breakage.

§ 223.17 Identification of Equipped Locomotives, Passenger Cars and Cabooses.

Each locomotive, passenger car and caboose that is fully equipped with certified glazing shall be stenciled on an interior wall as follows: "Fully equipped FRA Part 223 glazing" or similar words conveying that meaning in letters at least 1 inch high.

Appendix A—Certification of Glazing Material

As provided in this part, certified glazing materials installed in locomotives, passenger cars, or cabooses must be certified by the glazing manufacturer in accordance with the following procedures:

a. General Requirements

(1) Each manufacturer that provides glazing materials, intended by the manufacturer for use in achieving compliance with the requirements of this part, shall certify that each type of glazing material being supplied for this purpose has been succcessfully tested in accordance with this appendix and that test verification data is available to a railroad or to FRA upon request.

(2) The test verification data shall contain all pertinent original data logs and documentation that the selection of material samples, test set-ups, test measuring devices, and test procedures were performed by qualified personnel using recognized and acceptable practices and in accordance with this appendix.

b. Testing Requirements

(1) The material to be tested (Target Material) shall be a full scale sample of the largest dimension intended to be produced and installed.

(2) The Target Material shall be representative of production material and shall be selected on a documented random choice basis.

(3) The Target Material shall be securely and rigidly attached in a fixture so that the fixture's own characteristics will not induce test errors.

(4) The Target Material so selected and attached shall constitute a Test Specimen.

(5) The Test Specimen will then be equipped with a Witness Plate that shall be mounted parallel to and at a distance of six inches in back of the Target Material. The Witness Plate shall have at least an area which will cover the full map of the Target Material.

(6) The Witness Plate shall be an unbacked sheet of maximum 0.006 inch, alloy 1100 temper O, aluminum stretched within the perimeter of a suitable frame to provide a taut surface.

(7) The Test Specimen will be positioned so that the defined projectile impacts it at an angle of 90 degrees to the Test Specimen surface.

(8) The point of impact of the defined projectile will be within a radius of 3" of the centroid of the Target Material.

(9) Velocity screens or other suitable velocity measuring devices will be positioned so as to measure the impact velocity of the defined projectile within a 10% accuracy tolerance, with test modifications made to guarantee that the stipulated minimum velocity requirements are met.

(10) The Test Specimen for glazing material that is intended for use in end facing glazing locations shall be subjected to a Type I test regimen consisting of the following tests:

(i) Ballistic Impact in which a standard 22 caliber long rifle lead bullet of 40 grains in weight impacts at a minimum of 960 feet per second velocity.

(ii) Large Object Impact in which a cinder block of 24 lbs minimum weight with dimensions of 8 inches by 8 inches by 16 inches nominally impacts at the corner of the block at a minimum of 44 feet per second velocity. The cinder block must be of composition referenced in American Society for Testing and Materials (ASTM) Specification C33L or ASTM C90.

(11) The Test Specimen for glazing material that is intended for use only in side facing glazing locations shall be subjected to a Type II test regimen consisting of the following tests:

(i) Ballistic Impact in which a standard 22 caliber long rifle lead bullet of 40 grains in weight impacts at a minimum of 960 feet per second velocity.

(ii) Large Object Impact in which a cinder block of 24 lbs minimum weight with dimensions of 8 inches by 8 inches by 16 inches nominally impacts at the corner of the block at a minimum of 12 feet per second velocity. The cinder block must be of the composition referenced in ASTM C33L or ASTM C90.

(12) Three different test specimens must be subjected to the ballistic impact portion of these tests.

(13) Two different test specimens must be subjected to the large object impact portion of these tests.

(14) A material so tested must perform so that:

(i) there shall be no penetration of the back surfaces (side closest to Witness Plate) of the Target Material by the projectile. Partial penetration of the impact (front) surface of the Target Material does not constitute a failure; and

(ii) there shall be no penetration of particles from the back side of the Target Material through the back side of the prescribed Witness Plate.

(15) Test specimens must consecutively pass the required number of tests at the required minimum velocities. Individual tests resulting in failures at greater than the required minimum velocities may be repeated but a failure of an individual test at less than the minimum velocity shall result in termination of the total test and failure of the material.

(16) After successful completion of the prescribed set of required consecutive tests, a manufacturer may certify in writing that a particular glazing material meets the requirements of these standards.

c. Material Identification

(1) Each individual unit of glazing material shall be permanently marked, prior to installation, to indicate that this type of material has been successfully tested as set forth in this appendix and that marking shall be done in such a manner that it is clearly visible after the material has been installed.

(2) Each individual unit of a glazing material that has successfully passed the Type I testing regimen shall be marked to indicate:

(i) "FRA Type I" material;

(ii) the manufacturer of the material;

(iii) the type or brand identification of the material.

(3) Each individual unit of a glazing material that has successfully passed the Type II testing regimen shall be marked to indicate:

(i) "FRA Type II" material;

(ii) the manufacturer of the material;

(iii) the type or brand identification of the material.

Authority: Sec. 202, 84 Stat. 971 (45 U.S.C. 431); Sec. 1.49(n) of the regulations of the Office of the Secretary of Transportation, 49 CFR 1.49(n).

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John M. Sullivan,

Administrator.

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